

NOTES ON NEW AND NOTEWORTHY PLANTS. XII

Harold N. Moldenke

ALOYSIA SCORODONIOIDES var. *ORBICULARIS* Moldenke, var. nov.

Haec varietas a forma typica speciei recedit laminis foliorum orbicularibus 3—4.5 cm. longis latisque crasse dentatis.

This variety differs from the typical form of the species in having its leaf-blades orbicular, 3—4.5 cm. long and wide, with the margins coarsely dentate from base to apex.

The type was collected by Gustav Karl Wilhelm Hermann Karsten at Yuaco, near Pasto, Nariffo, Colombia, and is deposited in the herbarium of the Naturhistorisches Museum at Vienna.

CALLICARPA BASITRUNCATA Merr., sp. nov.

Frutex; ramis ramulisque gracilibus medullosis obtuse tetragonis obscure furfuraceis vel stellato-puberulis deinde glabratibus; foliis oppositis subsessilibus; petiolis stellato-tomentellis; laminis membranceis oblongis vel suboblanceolatis acutis vel subacuminatis integris vel paucidentatis, ad basim truncatis, supra glabris, subtus in venis stellato-tomentellis, deinde glabrescentibus; inflorescentiis supra-axillaribus cymosis perabbreviatis paucifloris dense stellato-tomentellis.

Shrub, 1 m. tall; branches and branchlets slender, light-colored, medullose, obtusely tetragonal, obscurely furfuraceous or stellate-puberulent, becoming glabrate in age; twigs very slender, brown, rather sparsely stellate-tomentellous with short cinereous hair, densest toward the apex; nodes not annulate; principal internodes to 5.5 cm. long; leaves decussate-opposite, subsessile; petioles 1—2 mm. long, stellate-tomentellous; leaf-blades membranous, much lighter beneath, oblong or very slightly oblanceolate, 6—9 cm. long, 1—2 cm. wide, acute or subacuminate at apex, entire or with a few appressed teeth near the apex, the margins slightly revolute in drying, truncate at base, glabrous above, stellate-tomentellous on the midrib and larger venation beneath when young, glabrescent in age (sometimes a few stellate hairs on the upper surface, especially along the midrib, when immature); inflorescence supra-axillary, much abbreviated, cymose; cymes few-flowered; peduncles very slender, about 5 mm. long, densely stellate-tomentellous; inflorescence-branches usually only one pair, very short, densely stellate-tomentellous; bractlets and prophylla minute; calyx about 1 mm. long and wide, very minutely and sparsely stellate-puberulent or glabrate, its rim very shallowly and obscurely 4-toothed; corolla white, its tube about 2 mm. long, glabrous, its limb 4-lobed, glabrous; stamens exerted.

The type of this species was collected by J. Linsley Gress-

itt (no. 1168) at Liamui (Leng Mun), on a bank by a small grove, Hainan Island, alt. 420 m., in June or July, 1935, and is deposited in the Langlois Herbarium at the Catholic University of America.

CLERODENDRUM CAPITATUM var. *VANDERYSTI* Moldenke, var. nov.

Haec varietas a forma typica speciei recedit tubo corollae glabro, calyce plerumque rubra, et petiolis sarmentisque ramulisque plerumque conspicue longaeque hispidis.

This variety differs from the typical form of the species in having the corolla-tube glabrous, the calyx mostly red when mature, and the petioles, twigs, and branchlets mostly very conspicuously long-hispid with stiff brownish hairs 3-4 mm. long standing at right angles.

The type was collected by Hyacinthe Vanderyst (no. 9418) at Ipamu, Belgian Congo, in May, 1921, and is deposited in the herbarium of the Jardin Botanique de l'Etat at Brussels.

CLERODENDRUM INCISUM var. *PARVIFOLIUM* Moldenke, var. nov.

Haec varietas a forma speciei typica foliis 1-3 cm. longis et 4-10 mm. latis recedit.

This variety differs from the typical form of the species in having its leaves only 1-3 cm. long and 4-10 mm. wide

The type of the variety was collected by Henri Humbert (no. 12741) on Mount Vohitrosy, in the lower valley of the Mandrare near Anadabolava, at an altitude of 800-850 m., Madagascar, in December, 1933, and is deposited in the herbarium of the Muséum National d'Histoire Naturelle at Paris.

CLERODENDRUM NUDIFLORUM Moldenke, sp. nov.

Frutex sarmentosus odoratus foetidus; ramulis glabris nitidisque vel interdum apicem versus minute puberulo-pilosulis, sub anthesin nudatis; foliis decussatis glabris nigrescentibus; laminis tenuiter membranaceis nigrescentibus ellipticis saepe conduplicatis acutis vel acuminatis integris vel serratis, ad basim acutis, utrinque glabris; inflorescentiis terminalibus paniculatis laxissime multifloris, cymis paucifloris 1-2-furcatis glabris; calyce campanulato glabro brevissime 5-dentato.

Shrub 5-6 m. tall, branched from the base, with a fetid terbinthine odor; bark gray, smooth; wood white; branchlets rather slender or medium-textured, obtusely tetragonal or sometimes sharply so and with margined angles and longitudinally wrinkled cortex, glabrous and shiny, very light-gray, sometimes minutely puberulous-pilosulous toward the apex, leafless at time of anthesis; twigs similar to the branchlets or the young leaf-producing ones nigrescent in drying, very minutely scattered-pilosulous or glabrous, very slender; nodes not annulate; principal internodes abbreviated, 0.4-6 cm. long; terminal buds & leaf-scars usually rather densely yellowish-puberulent; leaves

decussate-opposite, mostly appearing after the flowers (often a month later), rarely a few greatly undeveloped ones at the base of the inflorescences; petioles distinct, slender, 1--2 cm. long, glabrous, nigrescent in drying; blades thin-membranous, nigrescent in drying, elliptic, often more or less conduplicate, apparently to about 8 cm. long and 3--4 cm. wide, acute or acuminate at the apex, entire-margined when young, later shallowly serrate with broad blunt teeth, acute at the base, glabrous on both surfaces; midrib very slender, flat above, very slightly prominulous beneath; secondaries filiform, about 6 per side, arcuate-ascending, mostly very obscure and flat on both surfaces; veinlet reticulation mostly obscure or indiscernible on both surfaces; inflorescence terminal and terminating abbreviated lateral twigs, paniculate, appearing before the leaves (often a month earlier) or with a few very immature leaves at its base, 10--12 cm. long, 4--6 cm. wide at the base, very loosely many-flowered, composed of about 6--8 pairs of few-flowered cymes; rachis very slender, glabrous, mostly sharply tetragonal; peduncles very slender, exactly similar to the sympodia, about 1 cm. long or obsolete; bractlets linear, 1--3 mm. long, glabrous, a pair subtending each pair of cymes and each cyme-furcation; cymes once or twice furcate, 3--7-flowered, the branches elongate and widely divaricate, glabrous; calyx campanulate or cupuliform, 2--3 mm. long and wide, glabrous, nigrescent in drying, its rim very shortly 5-toothed, the teeth broadly ovate, blunt or acute, often minutely ciliolate, the posterior and two anterior ones slightly smaller and narrower than the lateral ones; corolla white, greenish-yellow, or violet, 2-lipped, puberulent or glabrous above the calyx outside, glabrous or puberulent within, the tube cylindric, about 5 mm. long, arched, the anterior lip bilobed, 7--8 mm. long, the lateral lobes oval, more or less concave, 6--7 mm. long, slightly concave, the posterior lobes slightly narrower and longer than the lateral ones, obtuse, slightly concave and spreading; stamens long-exserted, inserted near the apex of the corolla-tube in the middle of a tuft of hair; filaments glabrous, 10--12 mm. long; anthers bilocular, oblong, dehiscing by means of introrse slits; style terminal, arched, 10--12 mm. long, glabrous; stigma punctiform, sub-bilobed; ovary ovoid, slightly 4-lobed at the apex, 2- or 4-celled, glabrous, sitting on a small green glabrous disk; ovules suspended, anatropous, 2 or 4 per cell; fruiting-calyx patelliform, nigrescent in drying, about 4 mm. wide, subglabrescent, the rim shallowly lobed; fruit drupaceous, subglobose, 6--8 mm. long and wide, glabrous, deeply 2- or 4-lobed in drying.

The type of this distinct species was collected by Henri Perrier de la Bâthie (no. 10221) on hills at Tambirano, Madagascar, on June 8, 1908, and is deposited in the herbarium of the Muséum National d'Histoire Naturelle at Paris. Its leafless aspect at time of anthesis renders this species most distinctive.

CLERODENDRUM NUDIFLORUM var. PUBERULENTUM Moldenke, var. nov.

Haec varietas a forma typica speciei pedunculis rhachideque ramulisque inflorescentiae pedicellisque bracteolisque calyceque densissime puberulis recedit.

This variety differs from the typical form of the species in having the peduncles, rachis, inflorescence-branches, pedicels, bractlets, and calyx very densely puberulent.

The type of the variety was collected by André Seyrig (no. 91) in rocky places near Ampudandara, at 700--1000 m. altitude, Madagascar, and is deposited in the herbarium of the Muséum National d'Histoire Naturelle at Paris.

CLERODENDRUM SYLVESTRE var. PUBESCENS Moldenke, var. nov.

Haec varietas a forma typica speciei pilis pedunculorum pedicellorumque calycumque longioribus patentioribus recedit.

This variety differs from the typical form of the species in having the pubescence on the peduncles, cyme-branches, pedicels and calyxes longer and more spreading, plainly visible to the naked eye.

The type of this variety was collected by Henri Humbert and R. Capuron (no. 22143) in shady woods on gneiss laterite on the western slopes of the Massif de Marojejy (northeast), in the basin of the Lokoho, east of Ambalamansy, Andapa district, Madagascar, between November 28 and December 6, 1948, and is deposited in the herbarium of the Muséum National d'Histoire Naturelle at Paris.

CLERODENDRUM TRIPLINERVE var. SULCATUM (Thomas) Moldenke, comb. nov.

Clerodendrum formicarum var. sulcatum Thomas in Engl., Bot. Jahrb. 68: 74. 1936.

CONGEEA PETELOTI Moldenke, sp. nov.

Frutex scandens; ramis ramulisque densissime brunneo-pubescentibus velutinis; foliis decussatis; petiolis densissime brunneo- vel cinereo-pubescentibus, pilis antrorsis subappressis; laminis submembranaceis ellipticis acutis vel breviter acuminatis integris, ad basim plerumque rotundatis, supra densiuscule velutino-pubescentibus, subtus densissime velutinis; inflorescentiis laxae paniculatis dense velutinis; bracteis floralibus 3 ellipticis obtusis densissime albo-tomentellis.

Woody vine; branches and branchlets rather slender, obtusely tetragonal, very densely brownish-pubescent with short somewhat antrorse hairs, velutinous to touch; nodes annulate; principal internodes 2--5 cm. long; leaves decussate-opposite; petioles slender, abbreviated, 4--7 mm. long, very densely brownish- or cinereous-pubescent with antrorse subappressed hairs; leaf-blades submembranous, dark-green above, lighter beneath, elliptic, 5.5--14 cm. long, 3.5--8 cm. wide, acute or short-acumin-

ate at the apex, entire, mostly rounded or rarely subacute at the base, rather densely short-pubescent above, very densely velutinous-pubescent beneath with subappressed cinereous hairs, more densely pubescent on the larger venation above; midrib slender, plane above, prominent beneath; secondaries slender, 3--5 per side, arcuate-ascending, plane above, prominulous beneath, the lower ones not anastomosing at the margins, the upper ones joined in several prominulous loops near the margins; veinlet reticulation abundant, indiscernible above, prominulous beneath, the tertiaries conspicuous, parallel, uniform, issuing at right angles to the secondaries and midrib, mostly unbranched; inflorescence terminal, loosely paniculate, to about 25 cm. long and 21 cm. wide; peduncle short, slender, 3--4.5 cm. long, obtusely tetragonal, very densely velutinous-pubescent like the branchlets; sympodia 5 or 6, rather uniform, elongate, 4--5 cm. long, obtusely tetragonal, densely velutinous-pubescent like the branchlets; panicle-branches very slender, elongate, divaricately spreading at right angles, the lower ones to 13 cm. long, densely velutinous-pubescent, mostly with few widely-spaced cymes toward their apex, the cymes on white-pubescent stalks about 1 cm. long; cauline bracts a pair at the base of each panicle-branch, ovate or ovate-elliptic, 0.5--2 cm. long, 3--7 mm. wide, stipitate, acute at apex, entire, rounded at base, very densely white-velutinous or tomentellous on both surfaces; floral bracts 3, elliptic, 15--20 mm. long, 6--8 mm. wide, sessile, separate, obtuse or rounded at apex, entire, very densely white-tomentellous with matted hairs above, rather densely whitish-pubescent with subappressed hairs beneath, the venation mostly indiscernible above and quite prominent beneath; cymes about 6-flowered, the flowers sessile; calyx campanulate, about 5 mm. long and 4 mm. wide at anthesis, densely white-pubescent or -subtomentellous outside, the rim plainly 5-lobed, the lobes triangular-ovate, 1--1.5 mm. long, acute at the apex, erect; corolla slightly exserted, about 7 mm. long, brownish-pilose; stamens and pistil long-exserted, 12--17 mm. long.

The type of this very distinct species was collected by my good friend and colleague, Paul Alfred Pételot (no. 3852a) -- in whose honor it is named -- in thickets on sandy-calcareous soil at the village of Thom, province of Common, Tonkin, French Indo-china, in December, 1930, and is deposited in the Britton Herbarium at the New York Botanical Garden.

ERIOCAULON APICULATUM H. Lecomte & Moldenke, sp. nov.

Herba parva acaulescens; foliis caespitosis adscendentibus vel recurvatis 1--2 cm. longis obtusis glabris; vaginis laxiusculis glabris 1--2 cm. longis; pedunculis 4-costatis glabris 7--10 cm. longis; capitulis atro-griseis vel subnigris 3--4 mm. latis.

Small acaulescent herb; leaves cespitose, dark-green, ascending or recurved, 1--2 cm. long, 1--2 mm. wide at the mid-point, about 6-nerved, rather firm-textured and brunnescent in drying, not noticeably fenestrate, blunt or obtuse at apex, glabrous; sheath 1--2 cm. long, rather loose, not twisted, equalling or surpassing the leaves, glabrous, of the same color and texture as the leaves, obliquely split at the apex, the blades slightly scarious-margined; peduncles filiform, 2--8 per plant, 7--10 cm. long, 4-costate, slightly twisted, glabrous; heads hemispheric, blackish or dark-gray, 3--4 mm. wide; involucreal bractlets pale-stramineous, obovate, about 2 mm. long and 1 mm. wide, rounded at the apex, glabrous; receptacle glabrous; receptacular bractlets black, broadly cucullate-obovate, about 2 mm. long and 1.5 mm. wide, rounded at apex, glabrous; staminate florets: sepals 2, black on the upper half, hyaline at base, spatulate, about 1.5 mm. long and 0.5 mm. wide, slightly navicular and falcate, rounded at apex, glabrous; petals 3, connate into a whitish tube about 0.8 mm. long, glabrous, the free terminal portion minute, black-glanduliferous at the apex; stamens 6; filaments about equaling the petal-lobes; anthers dark-brown; pistillate florets: sepals 3, separate, black, oblong-spatulate, navicular and somewhat falcate, about 1.5 mm. long and 0.5 mm. wide, obtuse at apex, glabrous; petals 3, separate, hyaline, linear-oblong, about 1.3 mm. long and 0.3 mm. wide, acute and black-glanduliferous at apex, sparsely pilose along the margins; style slender, about 0.4 mm. long, glabrous, not appendaged; stigmas 3, about 0.8 mm. long; ovary subglobose, about 0.6 mm. long and wide, glabrous, 3-sulcate, 3-celled, 3-ovulate.

The type of this species was collected by Bernier (no. 79) on constantly inundated rocks at the cascades of Semiang, Madagascar, in or about 1834, and is deposited in the herbarium of the Muséum National d'Histoire Naturelle at Paris.

ERIOCAULON BROWNIANUM var. *LATIFOLIUM* Moldenke, var. nov.

Haec varietas a forma typica speciei foliis usque ad 1 cm. latis recedit.

This variety differs from the typical form of the species in having its leaves to 1 cm. wide at the mid-point.

The type of the variety was collected by George Henry Kendrick Thwaites (C.P. 378) at an altitude of 7000 feet in Ceylon and is deposited in the herbarium of the Jardin Botanique de l'Etat at Brussels.

ERIOCAULON FLUMINEUM Moldenke, sp. nov.

Herba aquatica acaulescens; foliis basalibus numerosis filiformibus vel graminoidibus valde variabilibus 40--60 cm. longis nervosis pulverulis vel glabris non fenestratis; vaginis crassis laxis 12--14 cm. longis glabris; pedunculis solitariis

percrassis 35--65 cm. longis valde spiraliter tortuosis multicostratis sulcatisque glabris nitidis; capitulis 15 mm. diametro griseis crassis firmis.

Acaulescent aquatic herb; leaves basal, numerous, filiform or grass-like, very variable in width, 40--60 cm. long, 1--4 mm. wide at the mid-point, usually considerably ampliate at the base (sometimes to 12 mm.), with several or numerous parallel veins which are sometimes prominent beneath, pulverulent or glabrous on both surfaces, not fenestrate, often subulate-tipped, often wavy; sheath coarse, loose, 12--14 cm. long, 2.5--5 mm. wide, somewhat twisted, glabrous, deeply split at the apex, the lobes about 1.5 cm. long, ovate, erect, blunt-tipped; peduncles solitary, very coarse, 35--65 cm. long, to 4 mm. in diameter, very conspicuously spirally twisted, many-costate and -sulcate, the costae broad and flattened, glabrous, shiny; heads hemispheric, about 15 mm. in diameter, grayish, firm and hard; involucrel bractlets tough, firm, stramineous, ovate-elliptic, about 2.5 mm. long and 2 mm. wide, rounded (often irregularly split) at the apex, glabrous and shiny on both surfaces; receptacle glabrous; receptacular bractlets blackish, elliptic, concave, about 4.5 mm. long and 2 mm. wide, triangular-acute at the apex, truncate at base, often with a small tooth on each margin near the middle, glabrous; staminate florets: sepals 3, separate, spatulate, blackish, about 3 mm. long and 1 mm. wide, rounded at the apex and densely barbellate there, attenuate-cuneate to the base; petals 3, united into an infundibular tube about 2.8 mm. long, the free portions 1 mm. long, lingulate, rounded at apex, with a small black gland near the apex within; stamens 6, unequal, not surpassing the petallobes; pistillate florets: sepals 3, separate, blackish, spatulate, about 3 mm. long and 1 mm. wide, slightly concave, glabrous, acute at the apex, broadly cuneate or cuneate-oblong at the base; petals 3, separate, hyaline, spatulate, about 3 mm. long and 1.3 mm. wide, rounded to a very short mucronate apex, glabrous on the back, pilose within, with a small black gland near the apex within, cuneate-oblong at the base; style about 0.5--1.4 mm. long; stigmas 3, about 0.7--1 mm. long; ovary oblong, about 0.8 mm. long and 0.5 mm. wide, glabrous, 3-sulcate, 3-celled, 3-ovulate.

The type of this very distinctive species was collected by Raymond Decary (no. 5423) in the rapids of the upper Manambia, in the vicinity of Vondrozo, province of Farafangana, Madagascar, on September 5, 1926, and is deposited in the herbarium of the Muséum National d'Histoire Naturelle at Paris.

ERIOCAULON HETEROCHITON var. *ACUMINATUM* Moldenke, var. nov.

Haec varietas a forma typica speciei recedit bracteolis involucri lanceolatis-elongatis, 2.5--3 mm. longis attenuato-acutis vel acuminatis, capitulis fructiferis ovato-cylindricis

usque ad 6 mm. longis brunneis, bracteolis receptaculi valde perspicuis peracuminatis.

This variety differs from the typical form of the species in having the involucrel bractlets lanceolate-elongate, 2.5--3 mm. long, surpassing the disk, attenuate-acute or acuminate at the apex, and the heads in fruit ovate-cylindric, to 6 mm. long, brown, with the receptacular bractlets very conspicuous, as large as the reflexed involucrel ones, conspicuously acuminate.

The type of this variety was collected by Henri Perrier de la Bâthie (no. 7241) in brackish marshes near Cape St. André, Madagascar, in June, 1904, and is deposited in the herbarium of the Muséum National d'Histoire Naturelle at Paris.

ERIOCAULON INUNDATUM Moldenke, sp. nov.

Herba acaulescens; foliis rosulatis graminoidis tenuiter membranaceis valde fenestratis 3--5 cm. longis glabris; vaginis late cylindricis 2--3 cm. longis glabris non tortis; pedunculis gracillimis 2--12.5 cm. longis 4- vel 5-costatis glabris; capitulis griseis ca. 4 mm. latis.

Acaulescent herb; leaves rosulate, grass-like, thin-membranous, conspicuously fenestrate, 3--5 cm. long, about 2.5 mm. wide at the mid-point, gradually narrowed from base to apex, glabrous and shiny on both surfaces; sheaths broadly cylindric, 2--3 cm. long, striate, glabrous, not twisted, obliquely split near the apex, the blade about 4 mm. long; peduncles 5--7 per plant, very slender, 2--12.5 cm. long, 4- or 5-costate, glabrous, hardly twisted; heads about 4 mm. wide, grayish; involucrel bractlets pale-stramineous, obovate-spatulate, about 2.5 mm. long and 1.5 mm. wide, rounded or subtruncate at the apex, slightly concave-cucullate toward the apex, broadly cuneate at the base, glabrous, shiny; receptacle glabrous; receptacular bractlets pale-stramineous, obovate, about 1.5 mm. long and 1.3 mm. wide, broadly rounded and short-mucronate at the apex and somewhat cucullate there, white-pilous toward and at the apex on the back, otherwise glabrous; staminate florets: sepals 3, separate, pale-stramineous, obovate, navicular, about 1.3 mm. long and 0.6 mm. wide, rounded and slightly cucullate and fimbriate at the apex, attenuate at base, glabrous, not glanduliferous; petal-tube white, about 1.3 mm. long, clavate, glabrous, free portion of the petals very minute, triangular-attenuate; free filaments 6, filiform, white, about 0.2 mm. long; anthers with 2 thecae, 4 cells; pistillate florets: sepals 3, hyaline, separate, oblong, about 1 mm. long and 0.2 mm. wide, emarginate at the apex, glabrous; petals 3, hyaline, separate, oblanceolate, about 1.3 mm. long and 0.4 mm. wide, broadly acute at the apex, attenuate to the base, white-pilose and barbellate at the apex, otherwise glabrous, non-glanduliferous; style about 0.4 mm. long; stigmas about 0.4 mm. long; ovary subglobose, about 0.4 mm. long and wide, 3-sulcate, 3-celled, 3-ovulate.

The type of this species was collected by Théodore Modod on inundated ground at Palmarin, Senegal, on October 28, 1943, and is deposited in the herbarium of the Institut Français d'Afrique Noire at Dakar. The type specimen was examined by R. D. Meikle at Kew, who reports that it represents a new species related to *E. hanningtonii* N. E. Br.

ERIOCAULON MADAGASCARIENSE Moldenke, sp. nov.

Herba aquatica; caulis elongatis 30--40 cm. longis submersis dense uniformeque foliosis; foliis capillaceis 3--4 cm. longis glabris; vaginis membranaceis 6--7 cm. longis laxis fenestratis glabris; pedunculis solitariis stramineis 30--50 cm. longis 5-costatis glabris; capitulis hemisphaericis albo-villosis.

Aquatic herb in flowing water; stems very slender, elongated, 30--40 cm. long, submerged, densely and uniformly leafy throughout; leaves hair-like, 3--4 cm. long, pale-green, glabrous, becoming matted when removed from the water; sheath membranous, 6--7 cm. long, loose, rather uniformly 3 mm. wide, several-nerved, fenestrate, glabrous, deeply split at the apex, the lobes erect, acute; peduncles solitary, apparently issuing some distance below the apex of each stem, erect, stramineous, 30--50 cm. long, 5-ribbed, flattened, glabrous, not noticeably twisted; heads hemispheric, white-villous, 7--9 mm. wide; involucre bractlets broadly elliptic-lingulate, black toward the apex, about 3 mm. long and 2 mm. wide, rounded at the apex, glabrous, shiny; receptacle white-villous; receptacular bractlets elliptic, concave, black, 2--3 mm. long, 1--1.5 mm. wide, cucullate-acute at the apex, glabrous; staminate florets: sepals 3, separate, spatulate, about 2 mm. long and 0.5 mm. wide, hyaline, obtuse at the apex, densely white-barbellate on the back above the middle; petals 3, connate up to the stamens, the free portion linear, hyaline, minute, glabrous except for the erecto-pilous apex, one often larger than the other two; stamens 6, unequal; anthers large, oblong, brown, about 0.7 mm. long; pistillate florets: not seen.

The type of this very distinct species was collected by Henri Perrier de la Bâthie (no. 17905) near Antrirabe, Madagascar, in February, 1927, and is deposited in the herbarium of the Muséum National d'Histoire Naturelle at Paris. Only staminate florets were in the head dissected. It was thought best not to injure the remaining heads on the type specimen in search of female florets, but to await further collections of this species, which is easily identified by its habitual characters.

ERIOCAULON MOKALENSE Moldenke, sp. nov.

Herba humilis acaulescens; foliis rosulatis graminoides plusminusve adpressis 1--3 cm. longis glabris; vaginis laxis ca. 8 mm. longis membranaceis glabris cyathiformibus; pedunculis gracillimis 1.5--3 cm. longis tortis glabris; capitulis at-

ro-griseis vel nigrescentibus 4--5 mm. latis.

Low acaulescent herb; leaves rosulate, grass-like, more or less appressed to the ground, 1--3 cm. long, 0.8--2 mm. wide at the mid-point, gradually ampliate to the base, green, mostly obscurely many-nerved and fenestrate only at the base, opaque when mature, glabrous, subulate- or somewhat blunt-tipped; sheath loose, about 8 mm. long, membranous, glabrous, the lower 3 mm. narrow-cylindric, the upper 5 mm. abruptly ampliate in cyathiform fashion, scarious, erect, obliquely split or 2-lobed, the lobes ovate, triangular-acute; peduncles very slender, 3--10 per plant, surpassing the leaves, 1.5--3 cm. long, minutely several-costate, twisted, glabrous; heads hemispheric, dark-gray or blackish, 4--5 mm. wide; involucrel bractlets broadly oblong-elliptic, stramineous or blackish-tipped, about 2.5 mm. long and 1.5 mm. wide, rounded and very minutely denticulate at apex, glabrous, shiny; receptacle glabrous; receptacular bractlets hyaline on the lower half, black above the middle, obovate-spatulate, about 2 mm. long and 1 mm. wide, rounded and minutely denticulate at the apex with a very minute apiculation at the center, glabrous; staminate florets: sepals 2, blackish, navicular, slightly falcate, obovate, 1.3--1.5 mm. long, about 0.6 mm. wide, rounded and irregularly denticulate at the apex, glabrous; petals 3, united into a solid white tube about 1.5 mm. long, the free terminal portions hyaline, minute; stamens 6; anthers dark-brown; pistillate florets: sepals 3, separate, blackish, oblanceolate, about 1.3 mm. long and 0.4 mm. wide, navicular, acute at the apex, glabrous; petals 3, separate, hyaline, oblong-spatulate, about 1.3 mm. long and 0.2 mm. wide, pilose along the margins, black-glanduliferous at the apex; style slender, about 0.2 mm. long, glabrous, unappendaged; stigmas 3, erect, very slender, about 0.8 mm. long; ovary subglobose, about 0.4 mm. long and wide, glabrous, 3-sulcate, 3-celled, 3-ovulate.

The type of this species was collected by Raymond Decary (no. 10229) among wet rocks in full sunlight at Mokala, district of Fort Dauphin, Madagascar, on August 7, 1932, and is deposited in the herbarium of the Muséum National d'Histoire Naturelle at Paris.

ERIOCAULON PARVICAPITULATUM Moldenke, sp. nov.

Herba parva acaulescens; foliis caespitosis linearibus numerosis adscendentibus 1--7 cm. longis subulatis fenestratis glabris; vaginis membranaceis 5--7 mm. longis laxis glabris; pedunculis valde numerosis filiformibus 1--4 cm. longis glabris non tortis; capitulis obconicis stramineis paucifloris 2--3 mm. latis.

Small acaulescent herb; leaves cespitose, green, linear, numerous, ascending, 1--7 cm. long, about 0.5 mm. wide, subulate-tipped, fenestrate, glabrous; sheath membranous, 5--7 mm.

long, loose, glabrous, about 0.7 mm. wide, deeply split at the apex, the lobes erect, scarious-hyaline, acute; peduncles very numerous, 30--100 per plant, filiform, 1--4 cm. long, 3-costate, not twisted, glabrous; heads obconic, stramineous, 2--3 mm. wide, few-flowered; involucrel bractlets stramineous, elliptic, concave, about 2.5 mm. long and 1.5 mm. wide, blunt at the apex, glabrous, shiny; receptacle glabrous; receptacular bractlets elliptic-lanceolate, about 2.5 mm. long and 1 mm. wide, acute at the apex, concave, glabrous; staminate florets: sepals 3, separate, hyaline, oblanceolate, about 1.5 mm. long and 0.3 mm. wide, attenuate-acute at apex, narrowed to the base, glabrous; petals 3, connate into a hyaline tube about 0.8 mm. long, the free terminal portions minute, oblong, black-glanduliferous; stamens 6, very small; anthers globose, white; pistillate florets: sepals 3, separate, hyaline, narrowly elliptic, about 1.7 mm. long and 0.4 mm. wide, acute at the apex, narrowed and involute at the base, glabrous; petals 3, separate, linear, hyaline, about 0.6 mm. long and 0.09 mm. wide, glabrous; style about 0.6 mm. long, very slender; stigmas 3, erect, about 0.6 mm. long; ovary subglobose, brownish, about 0.4 mm. long and wide, 3-sulcate, 3-celled, 3-ovulate.

The type of this distinct species was collected by Henri Perrier de la Bâthie (no. 7250) in marshes at Antrirabe, altitude 1500 m., Madagascar, in May, 1914, and is deposited in the herbarium of the Muséum National d'Histoire Naturelle at Paris.

ERIOCAULON SCHWEICKERDTI Moldenke, sp. nov.

Herba parva acaulescens; foliis rosulatis graminoidis membranaceis multinervis ca. 1 cm. longis obtusis glabris; vaginis pallide stramineis membranaceis laxis 8--10 mm. longis glabris; pedunculis ca. 15 crassiusculis pallide stramineis ca. 3 cm. longis 5-costatis glabris non tortis; capitulis hemisphaerico-ovatis lapido-caeruleis nigrescentibus 5 mm. latis.

Small acaulescent herb, described as 10--15 cm. tall by the collectors; leaves rosulate, grass-like, membranous, many-nerved, minutely fenestrate under a hand-lens, about 1 cm. long and to 3.5 mm. wide, blunt at the apex, glabrous on both surfaces, much shorter than the mature peduncles; sheath pale-stramineous, membranous, loose, 8--10 mm. long, deeply split at the apex, glabrous throughout, the lobes lanceolate-ovate, erect, about 3 mm. long, attenuate-acute at the apex; peduncles about 15 per plant, comparatively stout, pale-stramineous, about 3 cm. long when mature, surpassing the leaves, 5-costate, glabrous, not twisted; heads hemispheric-ovate, slate-blue when fresh, black in drying, about 5 mm. wide when mature; involucrel bractlets broadly obovate, blackish, concave, closely imbricate, about 2 mm. long and 1.8 mm. wide, rounded at the apex, subcuneate at the base, glabrous; receptacle glabrous; receptacular bractlets obovate-spatulate, blackish, about 2 mm. long and 1

mm. wide, acute or obtuse at the apex, often slightly denticulate above the middle, long-cuneate at the base, glabrous; staminate florets: sepals 3, connate only at the base, narrowly elliptic, about 1 mm. long and 0.3 mm. wide, obtuse and often slightly denticulate at the apex, glabrous; petal-tube hyaline, about 1.3 mm. long, glabrous, the free terminal portions 3, ovate-triangular, about 0.4 mm. long; stamens 4; anthers black; pistillate florets: sepals 3, blackish, oblanceolate, about 1.3 mm. long and 0.6 mm. wide, triangular-acute and denticulate at the apex, glabrous; petals 3, linear, hyaline, about 1.3 mm. long and 0.1 mm. wide, erect, glabrous, very sparsely pilose at the very apex; style about 0.4 mm. long; stigmas 3, about 0.4 mm. long; ovary subglobose, about 0.4 mm. long and wide, deeply 3-sulcate, 3-celled, 3-ovulate.

The type of this species was found as occasional specimens in water in a sandy streambed along the Nyamshatu River, in the Umtali district, Natal, Union of South Africa, in July, 1948, by Fisher and Schweickerdt (no. 234) and is no. 22324 in the Government Herbarium at Salisbury, Southern Rhodesia.

ERIOCAULON SELLOWIANUM var. *LONGIFOLIUM* Moldenke, var. nov.

Haec varietas a forma typica speciei recedit foliis plerumque pollice longioribus (usque ad 6 cm. longis) tenuioribus et pellucidis.

This variety differs from the typical form of the species in having its leaves usually more than an inch long (up to 6 cm. long), thin-membranous, and pellucid.

The type of the variety was collected in the neighborhood of Salinas, Goyaz, Brazil, by Hugh Algernon Weddell (no. 2138) and is deposited in the herbarium of the Jardin Botanique de l'Etat at Brussels.

ERIOCAULON TRILOBATUM var. *GLABRESCENS* Moldenke, var. nov.

Haec varietas a forma typica speciei foliis vaginisque omnino glabris recedit.

This variety differs from the typical form of the species in having its leaves and sheaths completely glabrous throughout at all times.

The type of the variety was collected by my good friend and colleague, Dr. Henri Humbert (no. 18055), in depressions in gneiss laterite in the forest of Analavory between Mandritsara and Andilamena, altitude 800 m., Madagascar, at the beginning of November, 1937, and is deposited in the herbarium of the Muséum National d'Histoire Naturelle at Paris.

GMELINA PALAWENSIS var. *CELEBICA* Moldenke, var. nov.

Haec varietas a forma typica speciei recedit laminis foliorum coriaceis vel subcoriaceis plerumque distincte obovatis, ad basim attenuato-cuneatis, usque ad 21 cm. longis.

This variety differs from the typical form of the species in having its leaf-blades coriaceous or subcoriaceous when mature, mostly distinctly obovate, and attenuate-cuneate at the base, to 21 cm. long and 8.7 cm. wide.

The type of the variety was collected by G. Kjellberg (no. 2001) at sea-level at Malili, Celebes, on August 2, 1929, and is no. 21308 in the Herbarium Bogoriense at Buitenzorg.

GMELINA PALAWENSIS var. *DINAGATENSIS* Moldenke, var. nov.

Haec varietas a forma typica speciei foliis subcoriaceis ellipticis 7--15 cm. longis, 3.5--7.5 cm. latis, acuminatis recedit.

This variety differs from the typical form of the species in having subcoriaceous elliptic leaf-blades, 7--15 cm. long, 3.5--7.5 cm. wide, acuminate at the base.

The type of this variety was collected by Captain George Patrick Ahern (no. 461Q) on the island of Dinagat, Philippine Islands, in 1901 or 1902, and is no. 21305 in the Herbarium Bogoriense at Buitenzorg.

KALAHARIA SPINESCENS var. *HIRSUTA* Moldenke, var. nov.

Haec varietas a forma typica speciei recedit caulibus ramisque ramulisque spinisque foliisque pedunculisque calicibusque dense patenteque hirsutis.

This variety differs from the typical form of the species in having the stems, branches, branchlets, spines, leaves, peduncles, and calyxes densely spreading-hirsute.

The type of the variety was collected by Bernard Dearman Burt (no. 3806) at Kazikazi, altitude 4200 feet, Tanganyika Territory, on July 14, 1932, and is deposited in the herbarium of the Jardin Botanique de l'Etat at Brussels.

LANTANA PUNCTULATA Moldenke, sp. nov.

Frutex multiramis; ramis ramulisque gracillimis sarmentosis tetragonis inermibus glabratibus; sarmentis obscure strigillosis glabrescentibus; foliis decussatis; petiolis brevissimis minute strigillosis; laminis submembranaceis brunnescentibus ovatis acutis crenatis, ad basim acutis, supra densiuscule strigillosis et resinoso-punctulatis, subtus densissime resinoso-punctulatis glabrescentibus.

Much-branched shrub; branches and branchlets very slender, light-gray, twiggy, tetragonal, unarmed, glabrate; twigs very slender, often brunnescent in drying, unarmed, very obscurely scattered-strigillose, glabrescent in age; nodes not annulate; principal internodes abbreviated, 0.4--3.5 cm. long, mostly quite regular; leaves decussate-opposite; petioles very slender, very short, 1--4 mm. long, minutely strigillose; blades submembranous, brunnescent in drying, ovate, 1--3 cm. long, 0.5--1.7 cm. wide, acute at the apex, regularly crenate along the

margins, apparently acute at the base, rather densely strigillose and resinous-punctulate above, very densely resinous-punctate beneath but much more sparsely strigillose or glabrescent; midrib very slender, flat above, slightly subprominulous beneath; secondaries very slender, 2 or 3 per side, flat and inconspicuous above, subprominulous or almost flat beneath; veinlet reticulation sparse, obscure or indiscernible above, only the larger tertiaries plainly visible beneath; inflorescence axillary, in opposite pairs at and near the tips of the twigs; peduncles filiform, 9--12 mm. long, very minutely scattered-strigillose and more or less resinous-punctate; heads capitate, about 1 cm. long and wide during anthesis, rather few-flowered, dense; bractlets large and foliaceous, conspicuous, broadly elliptic, membranous, about 5 mm. long and 3 mm. wide, acute at the apex, very sparsely scattered-strigillose on the back and rather densely resinous-punctate; corolla-tube very narrow-cylindric, about 5 mm. long, densely strigose on the outside, the limb about 3--5 mm. wide.

The type of this species was collected in woods at Colares, along the Amazon, Pará, Brazil, in June, 1832, probably by Eduard Friedrich Poeppig, and is deposited in the herbarium of the Naturhistorisches Museum at Vienna.

LIPPIA CALLENSI var. VILLOSA Moldenke, var. nov.

Haec varietas a forma typica speciei recedit foliis saepe verticillatis obovato-ellipticis usque ad 6 cm. latis, capitulis parvioribus densioribusque, et ramis fulvo-villosis (apicem versus densissimis velutinosisque).

This variety differs from the typical form of the species in having its leaves often whorled, obovate-elliptic, to 6 cm. wide, its heads smaller and denser, less than 1 cm. wide, and the pubescence on the stems fulvous-villous, very dense and velutinous toward the apex.

The type of the variety was collected by W. Mullenders (no. 2093) in a herbaceous savanna, altitude 870 m., at Kasendjim, Haut Lomami, Belgian Congo, on February 27, 1948, and is deposited in the herbarium of the Jardin Botanique de l'Etat at Brussels.

LIPPIA GRANDIFOLIA var. ANGUSTISPICATA Moldenke, var. nov.

Haec varietas a forma typica speciei recedit spicis 2--3 cm. longis, ca. 7 mm. latis, regulariter quadrangulari-cylindricis densissime multifloris, bracteolis artissime imbricatis, pedunculis valde abbreviatis, bracteolis ovatis carinatis.

This variety differs from the typical form of the species in having the spikes 2--3 cm. long and about 7 mm. wide throughout, regularly quadrangular-cylindric, very densely many-flowered, with very closely imbricate bractlets, the peduncles much abbreviated, 5 mm. long or less, the bractlets ovate, 4--5 mm.

long, keeled on the back, shortly attenuate-subacuminate or acute at the apex, canescent-strigillose on the back.

The type of the variety was collected by Van der Gucht (no. 364) in the Belgian Congo in 1912, and is deposited in the herbarium of the Jardin Botanique de l'Etat at Brussels. It is described as a shrub 1--1.5 m. tall, with cream-yellow flowers.

MERTENSIA VIRGINICA f. BERDI Moldenke, f. nov.

Haec forma a forma typica speciei corollis albis recedit.

This form differs from the typical form of the species in having white corollas.

The type of the form was collected by H. N. Moldenke (no. 21164) in a meadow along the banks of the Brandywine Creek, about 3 miles north of Wilmington, New Castle County, Delaware, on April 29, 1951, and is deposited in the Britton Herbarium at the New York Botanical Garden. The form is named in honor of my good friend and colleague, Morris Berd, whose unquenchable enthusiasm for all forms of Nature study led to the discovery of this hitherto unnamed albino form in the most spectacularly beautiful stand of "Brandywine bluebells" (the typical form) ever seen by myself.

PADUS VIRGINIANA var. MELANOCARPA (A. Nels.) Moldenke, comb. nov.

Cerasus demissa var. *melanocarpa* A. Nels., Bot. Gaz. 34: 25. 1902.

PADUS VIRGINIANA f. XANTHOCARPA (Sarg.) Moldenke, comb. nov.

Prunus virginiana f. *xanthocarpa* Sarg., Journ. Arnold Arb. 2: 117. 1920.

PAEPALANTHUS MINASENSIS Moldenke, sp. nov.

Herba caulescens; caulibus 4--5 cm. longis omnino dense foliosis densissime longi-villosis, pilis cinnamomeis tomentosis; foliis linearibus 5--13 cm. longis, 0.6 mm. latis, subulate-apiculatis glabris nitidis; vaginis anguste cylindricis ca. 2 cm. longis glabris; pedunculis solitariis paucis filiformibus 11 cm. longis 3-costatis tortis glabris stramineis nitidis; capitulis globosis griseo-brunneis ca. 4 mm. latis.

Caulescent herb; stems to 4 or 5 cm. long, densely leafy throughout, very densely long-villous with cinnamon-brown hairs making a conspicuous mat among the leaf-bases and completely hiding them; leaves linear, practically uniform in width throughout, 5--13 cm. long, about 0.6 mm. wide throughout, subulate-apiculate at the apex, glabrous and shiny on both surfaces; sheaths narrowly cylindric, about 2 cm. long, glabrous, obliquely split at the apex, the blade thin-membranous, subhyaline, about 3 mm. long; peduncles solitary, few per plant, filiform, about 11 cm. long, 3-costate, twisted, glabrous,

stramineous, shiny; heads globose, about 4 mm. wide, grayish-brown; involucre bractlets in several series, oblong, 1.3—1.9 mm. long, 0.8—1 mm. wide, brown or blackish along the middle and toward the apex, abruptly acute at the apex, glabrous; receptacular bractlets brownish, very thin-textured, oblong-elliptic, about 1.5 mm. long and 0.8 mm. wide, acute at the apex, densely barbellate on the back at the apex; staminate florets: sepals 3, separate, very thin-textured, brownish toward the apex, oblong-elliptic, about 1 mm. long and 0.3 mm. wide, densely white-barbellate at the apex on the back; petals 3, united into a hyaline tube about 1.5 mm. long, the free portions very small, glabrous; stamens 3, adnate to the petal-tube except at the apex; pistillate florets: sepals 3, separate, brownish, oblanceolate-spatulate, about 1.3 mm. long and 0.6 mm. wide, obtuse at the apex and densely white-barbellate there; petals 3, narrowly oblong, hyaline, about 1.3 mm. long and 0.2 mm. wide, long-pilose at the apex; style almost obsolete, about 0.09 mm. long, stout; stigmas 3, about 0.2 mm. long; style-appendages 3, about 0.4 mm. long; ovary subglobose, about 0.4 mm. long and wide, glabrous, 3-lobed, 3-celled, 3-ovulate.

The type of this species was collected in Minas Geraes, Brazil, by Martin Martens, and is deposited in the herbarium of the Jardin Botanique de l'Etat at Brussels, presented by Pierre Martens in 1932.

PETRAEOVITEX SUMATRANA var. SALOMONENSIS (Bakh.) Moldenke, comb. nov.

Petraeovitex multiflora var. salomonensis Bakh., Journ. Arnold Arb. 16: 73. 1935.

PREMNA BEQUAERTI Moldenke, sp. nov.

Frutex vel arbor; ramis ramulisque gracilibus dense cinereo-pubescentibus; foliis decussatis; petiolis densissime cinereo-pubescentibus; laminis membranaceis brunnescentibus late ellipticis abrupte acutis vel breviter acuminatis integris, ad basim rotundatis, supra plusminusve pulverulento-lepidellis, subtus dense resinoso-punctatis vel lepidellis, in venis albido-puberulis; inflorescentiis terminalibus paniculatis multifloris.

Shrub or tree; branches and branchlets slender, obtusely tetragonal, densely cinereous-pubescent on the younger parts, the twigs more densely so; nodes not annulate; principal internodes 0.5—2.5 cm. long, mostly abbreviated; leaves decussate-opposite; petioles slender, 10—18 mm. long, very densely cinereous-pubescent; blades membranous, brunnescenscent or almost nigrescent in drying, lighter beneath, broadly elliptic, 3—8 cm. long, 2.3—6 cm. wide, abruptly acute or short-acuminate at the apex, entire, rounded at the base, more or less pulverulent-lepidellous on the lamina above, densely albidous-puberulent on

the midrib and lower parts of the secondaries, more densely and persistently white-puberulent on the midrib and secondaries beneath, densely resinous-punctate or lepidellous on the lamina beneath; midrib slender, flat above, somewhat prominulous beneath; secondaries filiform, about 4 per side, ascending and slightly arcuate, flat above, only very slightly prominulous beneath; veinlet reticulation abundant, but mostly indiscernible above and obscure beneath; inflorescence terminal, paniculate, many-flowered, 4--6 cm. long, about 4 cm. wide; peduncles rather slender, tetragonal, 1.5--2 cm. long, densely cinereous-pubescent, often with a pair of large foliaceous bracts at its apex which are to 2.6 cm. long and 10 mm. wide and are stipitate like the leaves and resemble them in shape and texture and pubescence; bractlets ovate, 2--3 mm. long, a pair subtending each cyme-furcation, conduplicate-sessile at the base, attenuate at the apex, densely cinereous-pubescent; pedicels filiform, 0.5 mm. long, pubescent; calyx campanulate, 1.5--2 mm. long and wide, densely puberulent, its rim shortly toothed; corolla-tube about 3 mm. long, subglabrous, the limb densely puberulent on the outside, the lobes about 1 mm. long, obtuse.

The type of this species was collected by Joseph Charles Corneille Bequaert (no. 5592) in the Belgian Congo on September 8, 1914, and is deposited in the herbarium of the Jardin Botanique de l'Etat at Brussels.

PREMNA CORYMBOSA var. *MADAGASCARIENSIS* Moldenke, var. nov.

Haec varietas a forma typica speciei recedit foliis majoribus, laminis 7--13 cm. longis et 6--7 cm. latis, late ellipticis vel ovato-ellipticis, ad basim truncatis vel subcordatis, nitidulis, reticulo nervorum utrinque perspicue prominulo.

This variety differs from the typical form of the species in having more regularly larger leaves, the blades 7--13 cm. long and 6--7 cm. wide, broadly elliptic or ovate-elliptic, truncate or subcordate at the base, rather shiny, the vein and veinlet reticulation conspicuous and mostly prominulous on both surfaces.

The type of the variety was collected by Richard Baron (no. 2574) in central Madagascar in or before 1883, and is deposited in the herbarium of the Royal Botanic Gardens at Kew.

PREMNA MATADIENSIS Moldenke, sp. nov.

Frutex; ramis ramulisque gracilibus minute puberulis deinde glabrescentibus lenticellatis; foliis decussatis; petioliis 1--4 cm. longis sparsissime minuteque pilosulis; laminis membranaceis late ellipticis acuminatis dentatis utrinque glabratibus, ad basim rotundatis; inflorescentiis terminalibus cymosis multifloris 6plo furcatis puberulis.

Shrub; branches and branchlets slender, minutely puberulent on the younger parts and on the twigs, glabrescent in age, ob-

scurely tetragonal, the older parts gray, the younger parts brunnescent, lenticellate; nodes not annulate; principal internodes 0.5--3.5 cm. long; leaf-scars large, divaricately prominent; leaves decussate-opposite; petioles slender, 1--4 cm. long, flattened-sulcate above, very sparsely and minutely pilosulous; blades membranous, dark-green above, lighter beneath, broadly elliptic, 4--11 cm. long, 3.5--7.5 cm. wide, acuminate at the apex, coarsely and irregularly dentate above the middle, rounded at the base, practically glabrate on both surfaces; midrib slender, flat above, somewhat prominent beneath; secondaries very slender, 2--5 per side, arcuate-ascending, flat but quite distinct above, prominulous beneath, not plainly anastomosing; veinlet reticulation abundant, only the larger parts distinct above, flat but distinct beneath; inflorescence terminal, cymose, about 9.5 cm. long and 5 cm. wide, many-flowered, 6 or more times furcate; peduncles slender, about 3.5 cm. long, rather densely puberulent; cyme-branches rather densely puberulent; bractlets linear, 2--5 mm. long, minutely puberulous; pedicels about 1 mm. long, very slender, puberulous; fruiting-calyx shallowly cupuliform, about 3 mm. long, 5--6 mm. wide, puberulent, its rim shallowly 5-toothed or -scalloped; fruit drupaceous, subglobose, about 5 mm. long and wide, nigrescent in drying.

The type of this species was collected by Emile and Marcel Désiré Joseph Laurent at Matadi, Belgian Congo, in February, 1904, and is deposited in the herbarium of the Jardin Botanique de l'Etat at Brussels.

PRIVA HUMBERTI Moldenke, sp. nov.

Herba; caulibus ramisque gracilibus tetragonis densiuscule breviterque pubescentibus, pilis arcte divergentibus glanduloso-capitatis brevis et aliis albidis multo longioribus non-capitatis; foliis decussatis; petiolis filiformibus dense glanduloso- et non-glanduloso-pubescentibus; laminis tenuiter membranaceis ovatis acutis irregulariter dentatis, ad basim subtruncatis et paulo subcuneatis, utrinque parce pilosis.

Herb; stems and branches slender, tetragonal, rather densely short-pubescent with widely divergent gland-tipped hairs and with scattered much longer whitish non-capitate hairs interspersed, more dense on the younger parts; nodes annulate; principal internodes 1.5--6 cm. long; leaves decussate-opposite; petioles filiform, 1.7--3.8 cm. long, densely glandulose-pubescent and non-glandulose-pilose like the branches; blades thin-membranous, bright green, lighter beneath, ovate, 2.5--5.5 cm. long, 1.5--4 cm. wide, acute at the apex, rather coarsely and irregularly dentate except at the very base, subtruncate at the base and slightly cuneately prolonged into the petiole at the center, scattered pilose on both surfaces, the hairs somewhat shorter beneath; midrib filiform, flat above, prominulous be-

neath; secondaries filiform, 4 or 5 per side, ascending, very slightly arcuate, flat and often obscure above, subprominulous beneath, not anastomosing; veinlet reticulation indiscernible above, obscure or almost indiscernible beneath; inflorescence terminal, racemiform, 6.5--8 cm. long; rachis filiform, rather densely glandulose-pubescent and non-glandulose-pilose like the branches; pedicels filiform, 1--2 mm. long, rather densely short-pubescent; calyx cylindric, about 3 mm. long and 1 mm. wide, plainly 5-costate, antrorsely pilose-ciliate on the ribs, otherwise densely glandular-puberulent, the rim r-apiculate; bractlets setaceous, 1--2 mm. long; corolla small, its tube narrow-cylindric, about 4 mm. long, its limb 2 mm. wide; cocci stramineous, glabrous, completely unarmed, without ridges or wrinkles.

The type of this species was collected by that most enthusiastic student of the Madagascar flora, Dr. Henri Humbert (no. 19942), in a tropophilous forest and xerophilous bush on calcareous rocks in the gorges of Fiherenana between Beantsy and Anjamala, altitude 30--300 m., Madagascar, between January 16 and 19, 1947, and is deposited in the herbarium of the Muséum National d'Histoire Naturelle at Paris.

SABINA HORIZONTALIS f. PLUMOSA (Rehd.) Moldenke, comb. nov.

Juniperus horizontalis f. *plumosa* Rehd., Journ. Arnold Arb. 6: 204. 1925.

SYNGONANTHUS HUMBERTI Moldenke, sp. nov.

Herba parva acaulescens; foliis rosulatis numerosis adscendentibus vel patentibus lineari-filiformibus firmis 1--1.5 cm. longis glabris subulatis non fenestratis, ad basim a tomento albo pulviniformi circumdatis; vaginis gracillimis stramineis 1.5--2 cm. longis arcte adpressis parce patenteque capitato-pilosis; pedunculis numerosis gracilibus 4--23 cm. longis aureo-stramineis 3-costatis paulo tortis glabris (praeter apicem versus) nitidis; capitulis hemisphaericis vel deinde subglobosis brunneo-stramineis 4--5 mm. latis.

Small acaulescent herb; leaves rosulate, numerous, ascending or spreading, linear-filiform, firm, 1--1.5 cm. long, less than 0.5 mm. wide, glabrous but usually very densely surrounded with white tomentum at the base, subulate-tipped, not fenestrate; sheaths very slender, stramineous, 1.5--2 cm. long, conspicuously surpassing the leaves, closely appressed to the peduncle, more or less sparsely spreading-pilose with scattered capitate hairs standing at right angles to the sheath; peduncles mostly numerous, to 30 per plant, slender, 4--23 cm. long, golden-stramineous, 3-costate, slightly twisted, glabrous and shiny except at the more or less obscurely pilosulous apex; heads hemispheric or eventually subglobose, brownish-stramineous, 4--5 mm. wide; involucrel bractlets stramineous, numerous, conspicu-

uous, elliptic-lanceolate, about 2 mm. long and 1 mm. wide, acute at the apex, glabrous; receptacle long-pilose; staminate florets: sepals 3, separate, ovate, stramineous, somewhat navicular, about 1.5 mm. long and 0.5 mm. wide, acute at the apex, minutely scattered-pilose on the margins and back; petals 3, connate into a hyaline tube about 0.8 mm. long, the free terminal portions minute, black-glanduliferous at the apex within; stamens 3, included; anthers white; pistillate florets: sepals 3, separate, navicular, narrow-elliptic or oblanceolate, about 1.5 mm. long and 0.4 mm. wide, subacute or obtuse at the apex, pilose on the margins and back with short ascending hairs; petals 3, connate into a hyaline pilose tube about 1 mm. long, separate at the base and apex; style short and relatively stoutish, stramineous, about 0.4 mm. long, glabrous; the 3 stigmas and 3 style-appendages filiform-setaceous, hyaline, erect, about 0.4 mm. long; ovary subglobose, about 0.5 mm. long and wide, glabrous, stramineous, 3-sulcate, 3-celled, 3-ovulate.

The type of this very distinct species was collected by Dr. Henri Humbert (no. 3487) in sandy rocky soil in clearings of the forest in the upper valley of the Rienana (basin of the Matitanana), altitude 1000--1400 m., Madagascar, between November 18 and 22, 1924, and is deposited in the herbarium of the Muséum National d'Histoire Naturelle at Paris.

SYNGONANTHUS NIVEUS var. ROSULATUS (Körn.) Moldenke, comb. nov.

Paepalanthus niveus var. rosulatus Körn. in Mart., Fl. Bras. 3 (1): 435. 1863.

SYNGONANTHUS WEDDELLII Moldenke, sp. nov.

Herba caulescens; caulibus usque ad 15 cm. longis densiuscule albido-lanulosis omnino dense uniformiterque foliosis simplicibus; foliis graminoides adscendenti-subappressis, supremis paulo divergentibus, infimis reflexis, ca 2 cm. longis glabris non fenestratis; vaginis anguste cylindricis 3--4 cm. longis pilosis; pedunculis terminalibus 20--25 erectis gracillimis stramineis 22--36 cm. longis pilosis; capitulis hemisphaericis albis 5--9 mm. latis.

Caulescent herb; stems to 15 cm. long, rather densely white-lanulate among the leaf-bases, unbranched, densely and uniformly foliose throughout, the lowest leaves drying up and becoming reflexed in age; leaves grass-like, ascending-subappressed or the uppermost ones somewhat divergent, rather shiny, about 2 cm. long, about 1 mm. wide at the base, gradually narrowed to the obtuse apex, several-ribbed, glabrous on both surfaces, not fenestrate, rather firm except where reflexed; sheaths narrowly cylindrical, 3--4 cm. long, rather abundantly pilose with very thin, weak, divergent hairs, obliquely split at the apex, the blade erect, firm, lanceolate-ovate, 5--6 mm. long, more or less pilosulous, especially on the margins; peduncles 20--25 in

a cluster at the apex of the stem, erect, very slender, stramineous, 22--36 cm. long, scattered-pilose with very slender, weak, subappressed hairs except at the apex beneath the heads where they are spreading-erect and often clavate-tipped; heads hemispheric, white, 5--9 mm. wide; involucrel bractlets white, elliptic, about 2.5 mm. long and 1 mm. wide, acute at the apex, glabrous and shiny on both surfaces; receptacle pilose; receptacular bractlets none; staminate florets: sepals 3, separate, elliptic, hyaline, about 1.7 mm. long and 0.4 mm. wide, attenuate-acute at the apex, glabrous on both surfaces; petals 3, connate at the base, the free portions obovate, about 0.6 mm. long and 0.2 mm. wide, hyaline, glabrous; stamens 3, included; filaments filiform, white, about 0.17 mm. long; anthers small, white; pistillate florets: sepals 3, hyaline, lanceolate, about 2 mm. long and 0.6 mm. wide, attenuate-acuminate at the apex, glabrous on both surfaces; petals 3, hyaline, obovate-cuneate, about 1.5 mm. long and 0.5 mm. wide, 3-toothed and long-pilose at the apex, otherwise glabrous; style about 0.2 mm. long; stigmas 3, erect, about 0.3 mm. long; ovary globose, about 0.8 mm. long and wide, glabrous, 3-sulcate, 3-celled, 3-ovulate.

The type of this handsome species was collected by Hugh Algernon Weddell (no. 17, cat. no. 2725) in a marsh at Sertão da Amaroleite, Goyaz, Brazil, and is deposited in the herbarium of the Jardin Botanique de l'Etat at Brussels.

VERBENA ALATA f. ALBA Moldenke, f. nov.

Haec forma a forma typica speciei corollis albis recedit.

This form differs from the typical form of the species in having white or whitish corollas.

The type of the form was collected by Anders Frederik Regnell (no. I.326) at Serra do Caldas, Minas Geraes, Brazil, on October 16, 1861, and is deposited in the Britton Herbarium at the New York Botanical Garden.

VERBENA LACINIATA var. CONTRACTA (Lindl.) Moldenke, comb. nov.

Verbena multifida var. contracta Lindl., Bot. Reg. 21: pl. 1766. 1836.

VERBENA LACINIATA var. SABINI (Sweet) Moldenke, comb. nov.

Verbena erinoides var. sabini Sweet, Brit. Fl. Gard. 2: 347. 1838.

VERBENA PAULENSIS Moldenke, sp. nov.

Herba; caulibus gracilibus obtuse tetragonis dense hirsutopubescentibus, pilis sordido-griseis; foliis sessilibus vel subsessilibus ovatis subacutis, ad basim rotundatis vel truncatis, irregulariter dentatis, utrinque densiuscule hirsutopubescentibus; inflorescentiis terminalibus subcapitatis dense multifloris; pedunculis abbreviatis dense hirsutulo-pubescenti-

bus; bracteolis anguste lanceolatis attenuatis pubescentibus.

Herb; stems slender, obtusely tetragonal, densely hirsute-pubescent with sordid-grayish hairs; nodes not annulate; principal internodes 0.8--2.5 cm. long; leaves decussate-opposite, sessile or practically so, ovate, 1.5--2.5 cm. long, 1.2--2.2 cm. wide, subacute at the apex, rounded or truncate at the base, coarsely and irregularly dentate along the margins, the lowest teeth almost lobe-like, rather densely hirsutulous-pubescent on both surfaces, especially beneath; midrib slender, impressed above, prominulous beneath; secondaries filiform, 4--7 per side, the lower ones issuing palmately from the base of the blade, impressed above, prominulous beneath, ascending, hardly arcuate; veinlet reticulation rather abundant, impressed above, prominulous beneath; inflorescence terminal, the spikes subcapitate, densely many-flowered, about 2 cm. long and wide during anthesis, sometimes with 2 or a few flowers slightly separate from the main head; peduncles abbreviated, mostly 1--1.5 cm. long, densely hirsutulous-pubescent; bractlets narrowly lanceolate, 7--8 mm. long, 1--1.5 mm. wide at the base, densely pubescent, attenuate at the apex; calyx cylindric, about 9 mm. long, strongly 5-costate, densely hirsutulous-pubescent or hirsutulous on the outside, its rim irregularly 5-subulate-toothed; corolla hypocrateriform, showy, its tube about 1 cm. long, very sparsely pilosulous on the outside, the limb almost 1 cm. wide.

The type of this species was collected by Edwin Friderichs (no. 27901) in thickets at Campos do Jordão, São Paulo, Brazil, in January, 1944, and is deposited in the herbarium of the Colegio Anchieta at Porto Alegre.

VERBENA RAMBOI Moldenke, sp. nov.

Herba ca. 30 cm. alta; caulibus ut videtur simplicibus erectis acute tetragonis sulcatis pilosis; foliis sessilibus vel subsessilibus chartaceis elliptico-lanceolatis attenuato-acutis crasse incisus vel inciso-serratis parcissime pilosis, ad basim attenuato-angustatis; inflorescentiis terminalibus; pedunculis gracilibus acute tetragonis albido-hirsutulis.

Herb, apparently about 30 cm. tall; stems apparently simple, erect, acutely tetragonal, sulcate between the angles toward the apex, more or less scattered-pilose especially on the often margined angles, the hairs between the angles much more minute and appressed, those on the angles white, spreading or reflexed; nodes not annulate; principal internodes 1.5--2 cm. long; leaves decussate-opposite, sessile or practically so; blades rather grayish-green on both surfaces, chartaceous, elliptic-lanceolate in outline, 2--4.5 cm. long, 5--10 mm. wide, attenuate-acute at the apex, long-attenuate to the base, coarsely incised or incised-serrate with 3--5 teeth on each side at the middle broader portion of the leaf (the larger and lowest lobe-

like teeth often again toothed), very sparsely scattered-pilose above with stiff white appressed hairs, more densely so on the larger venation beneath; midrib slender, impressed above, prominent beneath; secondaries slender, about 3 per side, impressed above, prominulous beneath, not extending directly to the tips of the teeth or lobes, but branching early, with branches extending into the teeth; veinlet reticulation indiscernible on both surfaces; inflorescence terminal, composed of 3 abbreviated spikes; peduncles slender, 1 cm. long or less, acutely tetragonal, whitish-hirsutulous; floriferous portion of the spikes subcylindric, 1-2 cm. long, about 1 cm. wide during anthesis, very densely many-flowered; bractlets lanceolate-ovate, about 5 mm. long, 1 mm. wide at the base, long-attenuate at the apex, subulate-tipped, glabrate except for the long-ciliate margins; calyx cylindric, about 8 mm. long, conspicuously 5-ribbed and white-hirsutulous on the ribs, the rim irregularly subulate-toothed.

The type of this species was collected by my good friend and colleague, Padre Balduin Rambo (no. 25787), in bushy fields at Fazenda Santa Cecilia, near São Gabriel, Rio Grande do Sul, Brazil, on January 15, 1944, and is deposited in the herbarium of the Colegio Anchieta at Porto Alegre. Padre Rambo is doing a tremendously valuable work on the flora of Rio Grande do Sul and deserves the highest praise and compliment for his success in building up the important Herbarium Anchieta.

VITEX AUREA Moldenke, sp. nov.

Arbor parva; ramis ramulisque griseis plusminusve ferrugineo-tomentellis deinde glabrescentibus; sarmentis densissime tomentello-pubescentibus, pilis flavidis vel ferrugineis; foliis decussatis 1-foliolatis; petiolis crassiusculis dense flavido-tomentellis; laminis firme chartaceis vel subcoriaceis ellipticis vel obovatis integris utrinque tomentello-pubescentibus, supra deinde glabrescentibus; inflorescentiis axillariibus cymosis sub-multifloris; pedunculis 1-3 cm. longis.

Small tree to 8 m. tall; branches and branchlets medium-slender, grayish, very obtusely tetragonal or subterete, more or less ferruginous-tomentellous, glabrescent in age; twigs very densely tomentellous-pubescent with yellowish or ferruginous hairs; nodes often obscurely annulate; principal internodes 0.5-5 cm. long, mostly much abbreviated on the twigs; leaves decussate-opposite, 1-foliolate; petioles stoutish, 0.5-2 cm. long, flattened and sulcate above, densely tomentellous with yellowish or ferruginous hairs; blades firmly chartaceous or subcoriaceous, much lighter beneath, elliptic or obovate, 4-9 cm. long, 1.5-6.5 cm. wide, varying from rounded to obtuse or abruptly acute at the apex, entire, varying from rounded to acute at the base, more or less tomentellous-pubescent on both surfaces, becoming glabrescent above, the hairs flavidous or

ferruginous; midrib slender, flat or subimpressed above, prominent beneath; secondaries slender, 8—10 per side, ascending, slightly arcuate toward the margins, flat above, prominent beneath; veinlet reticulation abundant, obscure or indiscernible above, very prominent beneath; inflorescence axillary, cymose, mostly shorter than the subtending leaves, rather many-flowered; peduncles rather slender, 1—3 cm. long, flattened, densely flavidous-tomentellous; cyme-branches mostly abbreviated, densely flavidous-tomentellous; pedicels mostly obsolete; bractlets numerous, linear, 2—5 mm. long, densely yellow-tomentellous, conspicuous, firm; calyx campanulate, 3—4 mm. long and wide, very densely golden-tomentellous on the outside, its rim truncate and subentire; corolla-tube cylindric, 1.2—1.5 cm. long, slightly curvate, very densely golden-villous on the outside, the lobes about 2 mm. long, erect; stamens and pistil exerted about 5 mm. from the corolla-tube.

The type of this beautiful species was collected by Henri Perrier de la Bâthie (no. 16317) in a forest at about 2000 m. altitude, Mount Tramtanana, Madagascar, in April, 1926, and is deposited in the herbarium of the Muséum National d'Histoire Naturelle at Paris.

VITEX BEFOTAKENSIS Moldenke, sp. nov.

Frutex; ramulis gracilibus griseis obtuse tetragonis glabris; sarmentis canescenti-puberulis; foliis decussatis 1-foliolatis; petiolis minute canescenti-puberulis vel glabrescentibus; laminis firme chartaceis ellipticis vel ovato-ellipticis integris utrinque glabris nitidisque; cymis 1—3-floris.

Shrub; branchlets slender, gray, obtusely tetragonal, glabrous; twigs very slender, light-gray, the youngest parts canescent-puberulous, the older parts glabrescent; nodes not annulate; principal internodes 0.5—3 cm. long; leaves decussate-opposite, 1-foliolate; petioles slender, 6—9 mm. long, flattened above, minutely canescent-puberulous or glabrescent; blades rather firmly chartaceous, rather uniformly bright-green on both surfaces, somewhat nigrescent in drying, elliptic or ovate-elliptic, 3.5—8.5 cm. long, 3—4 cm. wide, varying from rounded or obtuse on smaller leaves to acute or very shortly acuminate on larger ones, entire, varying from rounded to acute or short-acuminate at the base, glabrous and shiny on both surfaces; midrib slender, flat above, prominent beneath; secondaries filiform, 4—6 per side, ascending, mostly flat above, very slightly prominulous beneath, anastomosing in shallow loops several mm. from the margins beneath; veinlet reticulation rather sparse, obscure or indiscernible above, obscure beneath; inflorescence axillary, cymose, much shorter than the subtending leaves; cymes 1—3-flowered; peduncles filiform, 3—10 mm. long, rather densely whitish-strigillose with closely appressed antrorse hairs; bractlets lanceolate-ovate, 2—3 mm.

long, about 1 mm. wide, densely cinereous-strigose, 1-3 pairs per cyme; pedicels filiform, 3-9 mm. long, densely cinereous-strigillose; calyx campanulate, about 5 mm. long and 4 mm. wide, 5-toothed, the tube densely cinereous-strigillose, the teeth 1-1.5 mm. long, less densely strigillose and mostly conspicuously nigrescent in drying, acute or subacute at the apex, minutely strigillose within; corolla clear-pink, curvate-cylindric, densely brownish-villosulous on the outside, the tube 10-13 mm. long, the lobes about 2 mm. long; fruiting-calyx thin-textured, nigrescent in drying, cupuliform, to about 7 mm. long and wide, sparsely and minutely strigillose, its rim plainly 5-toothed.

The type of this species was collected by Raymond Decary (no. 4757) at Befotaka, in the province of Farafangana, Madagascar, on September 11, 1926, and is deposited in the herbarium of the Muséum National d'Histoire Naturelle at Paris.

VITEX BERAVIENSIS var. ACUMINATA Moldenke, var. nov.

Haec varietas a forma typica speciei recedit ramulis manifeste tetragonis minute puberulis; foliis 5- vel 6-foliolatis; petiolis longioribus minute puberulis; petiolulis usque ad 4 cm. longis; laminis usque ad 14.5 cm. longis longe acuminatis; inflorescentiis omnino minute puberulis.

This variety differs from the typical form of the species in having its branchlets plainly tetragonal and minutely puberulous; the leaves 5- or 6-foliolate; petioles slightly longer and minutely puberulous; petiolules to 4 cm. long; leaflet-blades to 14.5 cm. long and long-acuminate; and the inflorescences minutely puberulent throughout; fruit about 2 cm. long and 1.5 cm. wide.

The type of this variety was collected by Henri Perrier de la Bâthie (no. 1595 bis) in sandy woods at Manonyarivo, Ambongo, Madagascar, in August, 1905, and is deposited in the herbarium of the Muséum National d'Histoire Naturelle at Paris.

VITEX BERAVIENSIS f. PILOSA Moldenke, f. nov.

Haec forma a forma typica speciei recedit calyce plusminusve adpresso-pilosis et petiolis petiolulisque ramulisque inflorescentiae foliisque subtus sarmentisque etiam plusminusve piloso-puberulentis.

This form differs from the typical form of the species in having the calyx more or less appressed-pilose during and before anthesis and often even after anthesis, and in having the petioles, petiolules, inflorescence-branches, lower leaf-surfaces, and young twigs also more or less pilose-puberulent.

The type of the form was collected by Grevé (no. 65) at Morondava, Madagascar, and is deposited in the herbarium of the Royal Botanic Gardens at Kew. It is hoped that more material of these novelties will soon be available.

VITEX BERAVIENSIS f. VILLOSA Moldenke, f. nov.

Haec forma a forma typica speciei recedit calyce bracteolis-que dense villosis, pilis sordido-canescensibus, petiolis petiolulisque pedunculisque ramisque inflorescentiae sarmentisque plerumque densiuscule puberulis vel breviter pubescentibus, et laminis foliorum subtus plusminusve puberulenti-pilosis.

This form differs from the typical form of the species in having the calyx and bractlets densely villous with sordid-canescens hairs; also in having the petioles, petiolules, peduncles, inflorescence-branches, and young twigs usually rather densely puberulent or short-pubescent and the lower leaf-surfaces more or less puberulent-pilose.

The type of this form was collected by Henri Humbert (no. 19711) at Anapaly, near Manera, in the valley of the Ianapaly, an affluent of the Fiherenana, Madagascar, at an altitude of 300 m., on December 13, 1946, and is deposited in the herbarium of the Muséum National d'Histoire Naturelle at Paris.

VITEX BOJERI var. SUBORBICULARIS Moldenke, var. nov.

Haec varietas a forma typica speciei recedit laminis foliorum coriaceis 1.5--3 cm. longis latisque truncatis vel emarginatis, subtus leviter obscureque puberulis.

This variety differs from the typical form of the species in having its leaf-blades coriaceous, 1.5--3 cm. long and wide, truncate or emarginate at the apex (rarely mucronulate-acute), very lightly and obscurely puberulent beneath, eventually more or less glabrescent except for the larger venation, densely resinous-punctate beneath; calyx puberulent, lobed to the middle, the lobes 2 mm. long.

The type of this variety was collected by Henri Humbert (no. 22624) in licheniferous woods on gneiss and quartzite on the eastern slopes of Massif de Marojejy west of the Manantenina river, an affluent of the Lokoho, Madagascar, between December 15 and 25, 1948, and is deposited in the herbarium of the Muséum National d'Histoire Naturelle at Paris.

VITEX CHRYSOMALLUM var. LONGICALYX Moldenke, var. nov.

Haec varietas a forma typica speciei recedit calyce sub anthesin ca. 7 mm. longo dense villosis et foliolis centralibus usque ad 10 cm. longis.

This variety differs from the typical form of the species in having its calyx during anthesis about 7 mm. long, densely villosis, and the central leaflets to 10 cm. in length.

The type of the variety was collected by Henri Perrier de la Bâthie (no. 10224) at an altitude of about 500 m., Massif de Manongarivo, Madagascar, in May, 1909, and is deposited in the herbarium of the Muséum National d'Histoire Naturelle at Paris.

VITEX CHRYSOMALLUM var. TOMENTELLA Moldenke, var. nov.

Haec varietas a forma typica speciei laminis foliorum subtus dense aureo-tomentellis, indumento adpresso, recedit.

This variety differs from the typical form of the species in having the lower leaf-surfaces densely golden-tomentellous with appressed indumentum.

The type of the variety was collected by M. Thouvenot (no. 150) at Analamazaotra, Madagascar, in 1919, and is deposited in the herbarium of the Muséum National d'Histoire Naturelle at Paris.

VITEX CAULIFLORA Moldenke, sp. nov.

Frutex; foliis ut videtur 1-foliolatis; petiolis glabris; laminis subcoriaceis ellipticis acuminatis integris subrevolutis, ad basim acutis vel subcuneatis, utrinque glabris; inflorescentiis ut videtur caulifloris fasciculatis sessilibus; pedicellis densissime brunneo-strigosis; calyce dense strigoso.

Shrub 4--5 m. tall; bark on stems apparently glabrous, light-gray; branches and branchlets not known; leaves presumably 1-foliolate; petioles slender, 1.8--2.8 cm. long, glabrous; blades subcoriaceous, rather uniformly dark-green on both surfaces, very shiny beneath, elliptic, 8--14 cm. long, 3--5 cm. wide, acuminate at the apex, entire and somewhat revolute along the margins, acute or somewhat cuneate at the base, glabrous on both surfaces; midrib slender, impressed above, very prominent beneath; secondaries very slender, 7--10 per side, arcuate-ascending, flat or very slightly subimpressed above, sharply prominent beneath, rather indistinctly arcuate-joined at the margins beneath; veinlet reticulation mostly obscure or indiscernible on both surfaces; inflorescence apparently cauliflorous, in small dense fascicles, sessile; pedicels very slender, about 5 mm. long, very densely strigose with sordid-brownish or grayish antrorse hairs; bractlets linear, 2--4 mm. long, densely strigose on one surface, glabrous on the other surface; calyx campanulate, herbaceous, 6--7 mm. long, about 5 mm. wide, densely strigose with sordid-yellowish or grayish antrorse hairs throughout, its rim deeply 5-lobed, the lobes triangular-ovate, attenuate-acuminate at the apex, 3--4 mm. long, equally strigose on the outside as the tube, their bases contiguous; corolla tubular, red or red-orange, 2--2.5 cm. long, incurved, glabrous at the base, rather densely spreading-hirsute with ferruginous hairs above the tips of the calyx-teeth, gradually ampliate to 6 mm. at the apex, the lobes spreading, 3--4 mm. long; stamens and style exerted less than 1 cm. from the corolla-mouth.

The type of this species was collected by Henri Perrier de la Bâthie (no. 10311) in woods at an altitude of 400 m. in the neighborhood of the bay of Anlongol, Madagascar, in August, 1912, and is deposited in the herbarium of the Muséum National d'Histoire Naturelle at Paris.

VITEX CAULIFLORA var. *LONGIFOLIA* Moldenke, var. nov.

Haec varietas a forma typica speciei recedit laminis foliorum 29--43 cm. longis, 5--8 cm. latis, petiolicis 4--5.5 cm. longis, et calyce parce strigilloso.

This variety differs from the typical form of the species in having the leaf-blades 29--43 cm. long, 5--8 cm. wide, petioles 4--5.5 cm. long, and the calyxes only lightly strigillose, less so on the lobes, the lobes separated by distinct sinuses at the base.

The type of the variety was collected by Leon Humblot (no. 90) at Passimbé, in northern Madagascar, on December 27, 1881, and is deposited in the herbarium of the Muséum National d'Histoire Naturelle at Paris.

VITEX CAULIFLORA var. *VILLOSISSIMA* Moldenke, var. nov.

Haec varietas a forma typica speciei recedit pedicellis calyceque sub anthesin omnino albido-pubescentibus, dentibus calycis 1.5--2 mm. longis, et corollis densissime albido-villosis.

This variety differs from the typical form of the species in having its pedicels and calyxes in anthesis densely albidous-pubescent throughout, the calyx-teeth only 1.5--2 mm. long, and the corollas very densely albidous-villous. The leaves are not known and may well show other differentiating characters.

The type of the variety was collected at Anony, in the northern forest of the country of the Sihanaka, Madagascar, on September 3, 1937, and is deposited in the herbarium of the Muséum National d'Histoire Naturelle at Paris.

VITEX COURSI Moldenke, sp. nov.

Arbor; ramis brunneo-velutinis; ramulis crassis obtuse tetragonis densissime brunneo-velutinis; foliis 9-foliolatis; petiolicis crassiusculis firmis ca. 19.5 cm. longis dense brunneo-pubescentibus vel velutinis; petiolulis inaequalibus elongatis dense brunneo-pubescentibus vel hirsutulo-velutinis; laminis subcoriaceis anguste oblanceolatis supra glabris, subtus velutino-pubescentibus, usque ad 25 cm. longis, 5.3 cm. latis acuminatis integris undulatis, ad basim breviter acuminatis et revoluto-inflexis; cymis axillaribus sessilibus dense congestis.

Tree 5--10 m. tall; branches very brown-velutinous; branchlets stout, obtusely tetragonal, very densely brown-velutinous, slightly canaliculate; principal internodes apparently much elongated, 7 or more cm. long; leaves decussate-opposite, 9-foliolate; petioles rather stout, firm, about 19.5 cm. long, densely brown-pubescent or velutinous; petiolules rather slender, unequal, elongate, the central ones to 3.5 cm. long, the lower ones about 1 cm. long, all densely brown-pubescent or hirsutulous-velutinous; leaflets subcoriaceous, dark-green above when fresh, rather uniformly colored on both surfaces when

dry, long and narrow, oblanceolate, the largest one 5--6 times as long as wide, glabrous (except for the midrib) and shiny above, rather sparsely velutinous-pubescent beneath with brown hairs, the central ones 21--25 cm. long and 4.4--5.3 cm. wide, acuminate at the apex, entire but often more or less undulate along the margins, mostly short-acuminate at the base with the margins strongly revolute or inflexed there, the lower ones 15--20 cm. long and 3--4.3 cm. wide, sometimes asymmetric at the base; midrib slender, impressed above, very prominent beneath, densely brown-hirsutulous on both surfaces; secondaries slender, 12--15 per side, mostly obscure or indiscernible above, sharply prominent beneath, divaricate-ascending, irregularly arcuate-anastomosing in many irregular loops near the margins beneath; veinlet reticulation very abundant, indiscernible above, prominent to the ultimate divisions beneath, irregular; inflorescence axillary, the cymes sessile or subsessile, very densely congested and many-flowered; peduncles and cyme-branches obsolete or very short and densely fulvous-villous; pedicels slender, 5--8 mm. long, very densely fulvous-villous; bractlets linear or oblong, about 5 mm. long, very densely fulvous-villous on both surfaces, mostly hidden in the inflorescence-pubescence; calyx cyathiform, garnet-red, about 6 mm. long and 5 mm. wide, very densely fulvous-villous with antrorsely appressed or subappressed velutinous hairs, the rim subtruncate, very shortly 5-dentate; corolla tubular, incurved, 2--2.5 cm. long, wine-red, very densely villous on the outer surfaces with long antrorsely subappressed silvery hair, the tube about 2 mm. wide at the base and 6 mm. wide at the apex, the lobes 2--2.5 mm. long, erect; stamens and pistil red, exerted about 5 mm. from the corolla at anthesis; anthers brown.

The type of this very distinct species was collected by G. Cours (no. 180) at Ankarota, altitude 1300 m., Ambatondrazaka district, Madagascar, on January 31, 1938, and is deposited in the herbarium of the Muséum National d'Histoire Naturelle at Paris.

VITEX ELAKELAKENSIS Moldenke, sp. nov.

Arbor; ramulis obtusissime tetragonis dense flavescenti-villosis deinde flavo-puberulis; foliis 5--7-foliolatis; petiolis dense flavescenti-hirsutis; petiolulis usque ad 7 mm. longis dense flavescenti-hirsutulis; foliolis chartaceis oblanceolatis obtusis vel acutis, ad basim cuneato-atenuatis, valde dentatis, utrinque dense hirsutulis.

Tree; branchlets rather slender, very obtusely tetragonal, densely flavescens-villous on younger parts, merely yellow-puberulent in age; nodes not annulate; principal internodes 1.5--4 cm. long; leaves decussate-opposite, 5--7-foliolate; petioles rather slender, 3--6.5 cm. long, densely hirsute with long flavescens hairs, less densely so in age; petiolules vary-

ing in length, those on the lowest leaflets subobsolete, on central ones 3--7 mm. long and densely flavescent-hirsutulous; leaflets chartaceous, gray-green on both surfaces, brunnescent in drying when immature, oblanceolate, obtuse or acute at apex, cuneate-attenuate at the base, conspicuously and coarsely dentate from the apex to below the middle with broadly ovate rather blunt or subacute teeth, more or less densely hirsutulous on both surfaces when young, less densely so when mature or merely hirsutulous-pilose on the larger venation above and more densely so beneath, the hairs coarse, spreading, and flavescent-brownish, the central leaflets 8--12 cm. long and 2--3.3 cm. wide, the lower ones much smaller; midrib slender, flat and usually quite densely yellow-hirsutulous above, prominent beneath and conspicuously villous-hirsute; secondaries filiform, 10--15 per side, short, ascending, hardly arcuate, terminating at the apices of the teeth, flat or often very obscure above, prominent beneath; veinlet reticulation rather abundant, usually indiscernible above and prominulous beneath; inflorescence not seen.

The type of this species was collected by Henri Humbert (no. 13836 bis) on the western slopes of the mountains between Andohahela and Elakelaka, in the basin of the Mananara, an affluent of the Mandrare, altitude 800--900 m., Madagascar, in January or February, 1934, and is deposited in the herbarium of the Muséum National d'Histoire Naturelle at Paris. It is possible that the type specimens is from a watersprout and that the foliar characters given above may, therefore, not be characteristic of the species.

VITEX FARAFANGANENSIS Moldenke, sp. nov.

Frutex; ramulis crassiusculis ad nodos plusminusve piloso-puberulis alibi glabrescentibus; foliis 1-foliolatis; petiolis crassis articulatis plusminusve piloso-puberulis vel glabrescentibus; laminis chartaceis firmis anguste ellipticis vel oblanceolatis acuminatis integris, ad basim acutis, supra parce pilosis vel glabrescentibus, subtus in reticulo plusminusve hirsutis vel glabrescentibus; inflorescentiis axillaribus sessilibus fasciculato-glomeratis multifloris.

Shrub, to about 6 m. tall; stems about 10 cm. in diameter; branchlets stoutish, apparently obtusely tetragonal, longitudinally wrinkled in drying, more or less pilose-puberulent at the nodes, glabrescent elsewhere; nodes apparently annulate; principal internodes much abbreviated, about 0.5 mm. long; leaves decussate-opposite, 1-foliolate; petioles stout, jointed at the apex, longitudinally wrinkled in drying, 1--5 cm. long, more or less pilose-pubescent or glabrescent; blades chartaceous, firm, narrow-elliptic or oblanceolate, 15--42 cm. long, 3--5.3 cm. wide, acuminate at the apex, entire, acute at the base, scattered-pilose above or glabrescent, more or less hir-

sute along the midrib and secondaries beneath or glabrescent; midrib slender, flat or subimpressed above, coarsely prominent beneath; secondaries very slender, 2--20 per side, arcuate-ascending, obscure or indiscernible above, prominulous beneath, anastomosing in many loops near the margins beneath; veinlet reticulation sparse, indiscernible above, slightly subprominulous beneath; inflorescence axillary, sessile or subsessile, fasciculate-glomerate, rather many-flowered; peduncles obsolete; pedicels filiform, 5--8 mm. long, densely hirsute with ferruginous hairs; calyx campanulate, membranous, bright-rose when fresh, nigrescent in drying, deeply lobed to the middle or beyond, the tube about 5 mm. long, hirsute with ferruginous hairs, the 5 lobes elongate-ovate, about 5 mm. long, long-attenuate to the apex, sparsely scattered-hirsute on the outside; corolla yellowish, cylindric, arched, about 1.5 cm. long, rather densely hirsute with ferruginous hairs, the lobes about 3 mm. long; stamens and pistil exserted 4--5 mm. from the corolla-tube; fruiting-calyx not enlarged, about 1 cm. long, hirsutulous, the rim deeply 5-lobed, including the drupaceous subglobose fruit.

The type of this distinctive species was collected by Raymond Decary (no. 5376) at Vondrozo, in the province of Farafangana, Madagascar, on September 16, 1926, and is deposited in the herbarium of the Muséum National d'Histoire Naturelle at Paris.

VITEX GRANDIDIANA var. *ANGUSTIFOLIA* Moldenke, var. nov.

Haec varietas a forma typica speciei recedit foliis anguste oblongo-ellipticis vel oblanceolatis 1--2.3 cm. latis, ad basim attenuato-acutis vel cuneatis, apicem versus saepe plusminusve dentatis.

This variety differs from the typical form of the species in having its leaves narrowly oblong-elliptic or oblanceolate, attenuate-acute or cuneate at the base, often more or less dentate toward the apex, 1--2.3 cm. wide.

The type was collected by Martin François Geay (no. 6702) between Fort Dauphin and Santa Luce, in the province of Fort Dauphin, Madagascar, in 1909 or before, and is deposited in the herbarium of the Muséum National d'Histoire Naturelle at Paris.

VITEX HUMBERTI Moldenke, sp. nov.

Arbor; ramulis dense fulvo-villosis, pilis subadpressis antrorsis, deinde glabrescentibus; foliis 3--5-foliolatis; petioli crassiusculis dense adpresso-villosulis, pilis fulvis antrorsis; petiolulis dense adpresso-villosulis; laminis subcoriaceis ellipticis vel obovatis plerumque rotundatis vel emarginatis integris subrevolutis, ad basim acutis vel obtusis, supra valde bullatis, utrinque scabrido-pubescentibus; inflorescent-

lis axillaribus subsessilibus paucifloris ubique dense fulvo-villosis.

Tree; branchlets medium-stout, densely fulvous-villous with subappressed antrorse hairs on the younger parts, glabrescent in age; nodes not annulate; principal internodes apparently abbreviated; leaves decussate-opposite, 3--5-foliolate; petioles rather stout, 3.5--6 cm. long, densely appressed-villosulous with antrorse fulvous hairs, decidedly flattened above; petioles unequal, the central one 8--14 mm. long, decidedly appressed-villosulous like the petioles, flattened and sulcate above, the lateral ones 1--5 mm. long; blades rather uniformly gray-green on both surfaces, subcoriaceous, elliptic or obovate, unequal in size, the central ones 6.5--9 cm. long, 3.5--4.5 cm. wide, mostly rounded or emarginate at the apex, varying to very bluntly short-mucronate, entire and slightly revolute along the margins, acute or obtuse at the base, conspicuously bullate above, scabridous-pubescent above and beneath, the lateral ones smaller and often asymmetric at the base; midrib slender, deeply impressed and villosulous above, very stout and prominent and fulvous-villosulous beneath; secondaries slender, 6--9 per side, slightly arcuate-ascending, deeply impressed above, very sharply prominent beneath, arcuately joined in many irregular loops near the margins; larger parts of the veinlet reticulation deeply impressed above and sharply prominent beneath; inflorescence axillary, subsessile, rather few-flowered, very densely fulvous-villous throughout; peduncles not more than 5 mm. long; cyme-branches much abbreviated; bractlets linear-subulate, to 5 mm. long, densely villosulous; calyx turbinate, about 4 mm. long and 2.5 mm. wide, densely fulvous-villosulous, its rim very shortly dentate; corolla cylindric, its tube 2--2.3 cm. long, incurved, about 5 mm. wide at the apex, glabrous at the base but densely spreading-villous with fulvous hairs on the part above the calyx, the lobes about 3 mm. long; the 4 stamens and style exerted about 5 mm. from the corolla-tube.

The type was collected by my very good friend and colleague, Dr. Henri Humbert (no. 23793) -- in whose honor it is named -- among ericaceous vegetation on the east summit of Massif de Marojijy, altitude about 1700 m., Madagascar, on March 25 or 26, 1949, and is deposited in the herbarium of the Muséum National d'Histoire Naturelle at Paris.

VITEX HUMBERTI var. ANGUSTATA Moldenke, var. nov.

Haec varietas a forma typica speciei recedit laminis foliorum tenuiter membranaceis anguste oblanceolatis ad apicem basimque longe acuminatis, subtus in reticulo minus villosulis.

This variety differs from the typical form of the species in having thin-chartaceous leaflet-blades, at least the central ones narrowly oblanceolate and long-acuminate at both apex and

base, and less densely villosulous on the larger venation beneath.

The type was collected at Anony, Forêt du Nord, in the Shinaka country, Madagascar, on September 3, 1937 [Herb. Jardin Botanique de Tananarive 2944], and is deposited in the herbarium of the Muséum National d'Histoire Naturelle at Paris.

VITEX LASTELLEI Moldenke, sp. nov.

Frutex vel arbor; ramulis obtuse tetragonis saepe leviter sulcatis dense villosulo-tomentellis, pilis flavidis vel brunneo-ferrugineis, deinde subglabrescentibus; foliis 1-foliolatis; petiolis dense villosulo-hirsutis vel tomentellis; laminis chartaceis ellipticis breviter acuminatis integris, ad basim acutis, supra plusminusve parce pilosis, subtus densiore pubescentibus; inflorescentiis axillaribus sessilibus glomeratis.

Shrub or tree; branchlets medium-slender, obtusely tetragonal, often shallowly sulcate between the angles, densely villosulous-tomentellous on the younger parts, the hairs yellowish or brownish-ferruginous, becoming less so or even glabrescent in age; twigs flattened, very densely villosulous or tomentellous with yellowish or brownish-ferruginous hairs; nodes annulate; principal internodes variable in length, 1--9.5 cm. long; leaves decussate-opposite, 1-foliolate; petioles rather slender, 1--1.5 cm. long, flattened and canaliculate above, densely villosulous-hirsute with yellowish hair or tomentellous with brownish-ferruginous hairs; blades chartaceous, uniformly bright-green on both surfaces, shiny above, elliptic, 4.5--14.5 cm. long, 2--5.5 cm. wide, short-acuminate at the apex, entire, acute at the base, more or less sparsely pilose above, more densely pubescent beneath (especially on the larger venation); midrib slender, impressed above, very prominent beneath; secondaries slender, 5--8 per side, arcuate-ascending, impressed above, sharply prominent beneath, conspicuously anastomosing in shallow loops several mm. from the margins; veinlet reticulation rather abundant, the larger parts impressed above and prominent beneath; inflorescent axillary, sessile, glomerate, rather few-flowered; peduncles and pedicels obsolete; bractlets completely hidden by the pubescence; calyx campanulate, 3--4 mm. long, 4--5 mm. wide, very densely villous, its rim 5-toothed; corolla cylindric, arched, about 1 cm. long, densely villous on the outside, the lobes 1--2 mm. long, erect; stamens and pistil exerted about 5 mm. from the corolla-tube; fruiting calyx cupuliform, about 5 mm. long and 8 mm. wide, very densely villous with brownish or ferruginous hairs, its rim rather shallowly 5-toothed; fruit drupaceous, oblong, 8--10 mm. long, about 6 mm. wide, not fleshy, glabrous, shiny.

The type of this species was collected by M. de Lastelle (marked "A" on the label) somewhere in Madagascar in 1841, and is deposited in the herbarium of the Muséum National d'Histoire

Naturelle at Paris.

VITEX LEANDRII Moldenke, sp. nov.

Frutex; ramulis crassiusculis griseis dense adpresso-puberulis, pilis sordido-flavidis, deinde glabrescentibus; foliis 3--5-foliolatis; petiolis adpresso-puberulis, pilis sordido-flavidis; petiolulis adpresso-puberulis; laminis tenuiter chartaceis vel submembranaceis brunnescentibus late ellipticis obtusis vel rotundatis integris, ad basim saepe asymmetricis rotundatis, supra glabris, subtus pilosulo-puberulis; inflorescentiis axillaribus cymosis subpaucifloris laxissimis.

Shrub 4--5 m. tall; branchlets rather stoutish, gray, densely appressed-puberulent with sordid-yellowish hairs on the youngest parts, soon glabrescent; nodes not annulate; principal internodes 2--4 cm. long; leaf-scars very large, circular, flattened, not at all elevated; buds very small; leaves decussate-opposite, 3--5-foliolate; petioles rather stoutish, conspicuously flattened above, 4--7 cm. long, appressed-puberulent with sordid-yellowish hairs; petiolules slender, irregular in length, those on the central leaflets to 16 mm. long, those on the lateral leaflets 3--4 mm. long, appressed-puberulent; leaflet-blades thin-chartaceous or submembranous, brunnescent in drying, broadly elliptic, apparently about 8--9 cm. long and 4.5--5.5 cm. wide, apparently obtuse or rounded at the apex (but most of the leaflets on the type are abnormal at apex), entire, rounded and often asymmetric at the base, glabrous above, more or less pilosulous-puberulent beneath, more densely so on the larger venation; midrib slender, flat above, prominent beneath; secondaries filiform, 8--10 per side, divaricate-ascending, rather straight, flat above, prominulous beneath, irregularly and inconspicuously arcuate-joined in many small loops near the margins beneath; veinlet reticulation mostly obscure above, only the largest parts subprominulous beneath; inflorescence axillary, about equaling the subtending petioles, rather few-flowered, very lax and open, dichotomously cymose; peduncles compressed, 2--2.5 cm. long, rather densely appressed-puberulent with sordid-flavescent hairs, brunnescent in drying; cyme-branches elongate, brunnescent in drying, flattened, 6--8 mm. long, rather sparsely appressed-puberulent; pedicels filiform, 5--6 mm. long, brunnescent, sparsely puberulent; bractlets numerous, conspicuous, foliaceous, elliptic-oblancoolate, 8--15 mm. long, 2--5 mm. wide, glabrate above, densely yellowish-puberulent beneath, the uppermost ones linear, 5--6 mm. long and about 1 mm. or less wide; calyx campanulate, herbaceous, brunnescent in drying, about 8 mm. long, somewhat zygomorphic, rather densely appressed-puberulent with sordid-yellowish antrorse hairs outside, deeply 2-lipped to about the middle, 3 of the lobes more or less connate and 4 mm. long, the other 2 lobes separate, ovate, attenuate-acute at the apex, a-

bout 3 mm. long; corolla tubular, small, incurved, densely appressed-villous with sordid-silvery antrorse hairs, the tube about 1 cm. long, about 4 mm. wide at the apex, the lobes minute, about 1 mm. long; stamens and pistil exerted about 8 mm. from the corolla-mouth; fruiting-calyx enlarged, campanulate, to 1 cm. long, brunnescent, appressed-puberulent, deeply lobed and irregularly split; fruit drupaceous, globose, 6--7 mm. long and wide, glabrous, shiny, wrinkled in drying.

The type of this species was collected by Jacques Leandri (no. 550) at Andranoboka, Tsingy du Bemaraha, 9th Reserve, Madagascar, on November 21, 1932, and is deposited in the herbarium of the Muséum National d'Histoire Naturelle at Paris.

VITEX LOBATA Moldenke, sp. nov.

Frutex; ramis ramulisque gracillimis obtusissime subtetragonis vel subteretibus sarmentosis minute puberulis vel glabrescentibus; sarmentis densissime puberulis; foliis 1-foliolatis; petioli filiformibus minute puberulis; laminis membranaceis ellipticis vel ovatis acutis vel obtusis, ad basim obtusis vel rotundatis, irregulariter lobatis vel inciso-dentatis, utrinque minute puberulis et densiuscule resinoso-punctatis; inflorescentiis axillaribus 1-floris minute puberulis.

Shrub, about 2 m. tall; branches and branchlets very slender, very obtusely subtetragonal or subterete, light-gray, minutely puberulent or glabrescent, twiggy; twigs very slender, grayish, densely puberulent; nodes not annulate; principal internodes very variable, 0.3--5 cm. long; leaves decussate-opposite, 1-foliolate; petioles filiform, 5--10 mm. long, minutely puberulent; blades membranous, brunnescent in drying, lighter beneath, elliptic or ovate, 1--3.5 cm. long, 7--17 mm. wide, acute or obtuse at the apex, mostly obtuse or rounded at the base, irregularly lobed or incised-dentate along the margins, very lightly and minutely puberulous and rather densely resinous-punctate on both surfaces; midrib very slender, flat above, slightly prominulous beneath; secondaries 3--5 per side, arcuate-ascending, mostly indiscernible above, slightly subprominulous beneath; veinlet reticulation mostly indiscernible on both surfaces; inflorescence axillary, 1-flowered; peduncles filiform, 1--1.5 cm. long, minutely puberulent; pedicels filiform, 8--12 mm. long, minutely puberulent; bractlets one pair, linear-setaceous, at the apex of the peduncle, 1--1.5 mm. long, minutely puberulent; calyx campanulate, 2--3 mm. long and wide, minutely puberulous and resinous-punctate on the outside, its rim minutely 5-denticulate; corolla wine-red, its tube 1.5--1.8 cm. long, greatly arched, densely puberulent on the outside, the lobes about 3 mm. long; stamens exerted about 5 mm. from the corolla-tube; fruiting-calyx patelliform, about 2 mm. long and 6 mm. wide, more or less pulverulent and resinous-punctate, the rim truncate, very minutely apiculate.

The type of this very distinct species was collected by Henri Humbert and Charles Fletcher Swingle (no. 5639) in the lower valley of the Mandrare, east of Ambovombe, Madagascar, in September, 1928, and is deposited in the herbarium of the Muséum National d'Histoire Naturelle at Paris. A sheet of loose leaves, Perrier de la Bâthie 10276 bis, is referred here tentatively. The leaves are firmly chartaceous and shiny, to 8 cm. long and 4 cm. wide, acuminate-cuneate at the base, glabrous on both surfaces, and with the secondaries and veinlet reticulation conspicuous and subprominulous on both surfaces.

VITEX MADAGASCARIENSIS Moldenke, sp. nov.

Frutex; ramis paucis crassis obtuse tetragonis profunde canaliculatis dense glanduloso-pubescentibus, pilis brevibus fulvo-brunneis; foliis 9-foliolatis; petiolis densissime glanduloso-pubescentibus et non-glanduloso-pilosis; foliolis sessilibus chartaceis vel submembranaceis longissimis oblanceolatis supra plusminusve parce pilosis, subtus in venis majoribus densiore pilosis densissime impresso-punctatis, laminis longe acuminatis integris, ad basim longe attenuatis; inflorescentiis axillaribus sphaeroideis sessilibus dense congestis multifloris.

Shrub, 2--4 m. tall; branches few, with the leaves clustered at their summit, stout, obtusely tetragonal, deeply canaliculate, densely glandular-pubescent on the younger parts with short-fulvous-brown hair interspersed with much longer non-glandular hairs that rub off in age; leaves decussate-opposite, 9-foliolate; petioles stout and stiff, conspicuously angular, 24--25 cm. long, very densely glandular-pubescent with spreading fulvous-brown short hair, interspersed with much longer non-glandular hairs; leaflets sessile, chartaceous or submembranous, rather dark-green on both surfaces or somewhat lighter above in drying, very long and narrow, mostly 6 times as long as wide, oblanceolate, more or less lightly pilose above, much more densely so on the larger venation, very densely impressed-punctate and pilosulous-puberulent or short-pubescent beneath, with scattered much longer hairs interspersed, more densely pubescent on the venation, the central ones 27--30 cm. long and 3.6--5.1 cm. wide, long-acuminate at the apex, entire, long-attenuate to the base, the lower ones 8--11 cm. long and 1.5--2.8 cm. wide, asymmetrical; inflorescence apparently axillary, spherical, sessile, densely congested, many-flowered, very densely fulvous-villous or -hirsute throughout; peduncles obsolete; cyme-branches and pedicels much abbreviated, mostly completely hidden by the flowers; bractlets linear, about 5 mm. long, densely fulvous-hirsute; calyx yellow when fresh, campanulate, about 6 mm. long and wide, densely fulvous-villous or -hirsute, its rim truncate and subentire; corolla infundibular-tubular, 2--2.5 cm. long, somewhat incurved, very densely fulvous-villous or -hirsute outside, yellow when fresh, the

tube about 8 mm. wide at the apex, gradually narrowed to the base, the lobes 5, unequal, 4--5 mm. long, acute or subacute at the apex, densely fulvous-villous outside, with only a few scattered hairs on the inner surface, reflexed at anthesis; stamens exerted about 1 cm. from the corolla-tube, the exerted portion very sparsely scattered-pilosulous; anthers deeply bilobed, slightly over 1 mm. long, the thecae often somewhat twisted at the base; pistil slightly shorter than the stamens, glabrous, bifid at the apex.

The type of this very distinct species was collected by Henri Perrier de la Bâthie (no. 10269) in the eastern forest at Vatovavy, in the basin of the Manonjary, Madagascar, in October 1911, and is deposited in the herbarium of the Muséum National d'Histoire Naturelle at Paris. The collector makes the curious statement that "infl. en grosse sphère de 0,20 a 0,40 cm. de diam.", but the inflorescence on the type specimen is 6 cm. in diameter. He also says "poils d'un rouge orange" and "calice et corolle jaunes".

VITEX MICROPHYLLA Moldenke, sp. nov.

Frutex ramosus; ramis ramulisque gracillimis griseis acute vel obtuse tetragonis plusminusve cinereo-puberulis deinde glabrescentibus; sarmentis numerosis brevibus gracillimis densissime cinereo- vel sordido-pubescentibus; foliis 3-foliolatis; petiolis filiformibus densissime cinereo- vel sordido-pubescentibus; laminis chartaceis vel membranaceis late ellipticis vel obovatis vel subrotundatis, supra subadpresso-puberulis, subtus densissime tomentello-pubescentibus, non punctatis integris; inflorescentiis paniculatis paucifloris.

Shrub about 2 m. tall; branches and branchlets numerous, very slender, grayish, acutely or obtusely tetragonal, more or less cinereous-puberulent, glabrescent in age, the angles sometimes slightly margined; twigs numerous, short, very slender, very densely cinereous- or sordid-pubescent with short rather spreading hairs; nodes not annulate; principal internodes 0.3--3.5 cm. long, mostly much abbreviated; leaf-scars conspicuously elevated, corky; leaves decussate-opposite, 3-foliolate, numerous; petioles filiform, 4--21 mm. long, very densely cinereous- or sordid-pubescent; petiolules filiform, 1--6 mm. long, densely cinereous-pubescent, or obsolete on lateral leaflets; leaflets thin-chartaceous or membranous, rather uniformly bright-green on both surfaces or somewhat lighter beneath, varying from broadly elliptic or obovate to subrotund, often somewhat asymmetric, subappressed-puberulent above, very densely tomentellous-pubescent beneath, not punctate, the central one 4--21 mm. long, 4--14 mm. wide, varying from acute to obtuse or rounded at the apex, entire, varying from subcuneate-acute to rounded at the base; midrib filiform, flat above, very slightly subprominulous beneath; secondaries filiform, 3--5 per side,

flat or obscure above, mostly obscured by the pubescence beneath, ascending, hardly arcuate; veinlet reticulation rather abundant, mostly indiscernible above, mostly obscure beneath; inflorescence terminating the very short axillary twigs, in very small panicles 1--3 cm. long and 1--2 cm. wide, few-flowered, equaling or shorter than the subtending leaves; peduncles filiform, 1--5 mm. long, densely short-pubescent with cinereous or sordid hairs, sometimes with a pair of very small 3-foliolate leaf-like bracts at the apex; pedicels and inflorescence-branches filiform, densely sordid-pubescent, the former 0.5--1.5 mm. long, the latter to 4 mm. long; bractlets linear, to 2 mm. long, densely cinereous-pubescent; calyx campanulate, herbaceous, about 2 mm. long and wide, densely short-pubescent or puberulent and resinous-punctate, its rim shortly 5-dentate; corolla yellowish (or the lobes brownish and the tube greenish-white), 2-lipped, puberulent and resinous-punctate on the outside, the tube about 3 mm. long, the lower lip about 2 mm. long, wide-spreading, the upper lobes about 1 mm. long, rounded at the apex; stamens and pistil equaling the corolla-tube; fruiting-calyx incrassate, cupuliform, about 3.5 mm. long and wide, puberulent and somewhat resinous-punctate, the rim conspicuously triangular-dentate, the teeth attenuate-acute at the apex; fruit drupaceous, elliptic, about 8 mm. long and 5 mm. wide, glabrous, shiny, much wrinkled in drying.

The type of this very distinct species was collected by André Seyrig (no. 250) at various places among gneiss rocks, altitude 750--1000 m., in the neighborhood of Ampandravana, between Bekily and Tsivory, Madagascar, in October, 1942, and is deposited in the herbarium of the Muséum National d'Histoire Naturelle at Paris.

VITEX OSCITANS Moldenke, sp. nov.

Frutex vel arbor; ramulis crassiusculis griseis dense puberulis; foliis 1-foliolatis; petiolis crassis minutissime puberulis vel glabrescentibus; laminis coriaceis late ellipticis vel obovatis, ad apicem subtruncatis vel roundatis, integris sub-revolutis, ad basim cuneato-acutis vel breviter acuminatis, utrinque glabris, subtus obscure impresso-punctatis; inflorescentiis axillaribus cymosis paucifloris dense adpresso-puberulis.

Shrub or tree; branchlets stoutish, grayish, densely puberulent on the younger parts; principal internodes apparently rather short, 1.5--2 cm. long; leaves decussate-opposite, 1-foliolate; petioles stout, 1.6--2 cm. long, very minutely puberulous or glabrescent, swollen at the apex; blades coriaceous, rather uniformly bright-green on both surfaces, very shiny beneath, broadly elliptic or obovate, 11--14 cm. long, 6--8 cm. wide, varying from subtruncate or rounded at the apex to very short-apiculate, entire, usually somewhat revolute at the margins in drying, cuneate-acute or short-acuminate at the base,

glabrous (or practically so) on both surfaces, obscurely impressed-punctate beneath; midrib coarse, flat above, very prominent toward the base beneath, rapidly diminishing in size as the apex is approached beneath; secondaries very slender, 7--9 per side, flat and mostly obscure above, prominulous beneath, divaricate-ascending, often furcate and irregularly anastomosing in many loops near the margins beneath; veinlet reticulation indiscernible above, only the larger parts prominulous beneath; inflorescence axillary, cymose, few-flowered, about equalling the subtending petioles; peduncles flattened, about 5 mm. long, densely appressed-pubescent with cinereous short hairs; cyme-branches and pedicels slender, 2--4 mm. long, densely appressed-puberulent with antrorse whitish hairs; bractlets rather large and conspicuous, spatulate, about 5 mm. long, stipitate, about 3 mm. wide at the apex, glabrous and brunnescent on one surface, the other surface densely appressed-puberulent with antrorse cinereous hairs; calyx campanulate, 5--6 mm. long and wide, very densely short-pubescent with appressed cinereous hairs outside, glabrous within, its rim often flaring, 5-toothed, the teeth broadly triangular-ovate, 1.5--2 mm. long, attenuate-acute or cucullate-apiculate at the apex; corolla infundibular, short and broad, densely villous-hirsute outside, more densely so toward the apex, with long sordid-brownish hairs, the tube 1--1.3 cm. long, 7--8 mm. wide at the apex, the limb rather deeply lobed, the upper lobe firm or arched, the others patent-reflexed, 4--5 mm. long; stamens and pistil surpassing the corolla-mouth by about 1 cm.; filaments pilosulous on the exerted portion; anthers about 1.5 mm. long, the 2 thecae often twisted; style glabrous, bifid at the apex.

The type of this species was collected by M. Louvel (no. 81) at Tampina, Madagascar, in July, 1925, and is deposited in the herbarium of the Muséum National d'Histoire Naturelle at Paris.

VITEX PERVILLEI var. PUBESCENS Moldenke, var. nov.

Haec varietas a forma typica speciei recedit sarmentis petiolisque petiolulisque laminisque pedunculisque ramisque cymorum pedicellisique bracteolisique calycibusque dense puberulis et laminis subtus dense resinoso-punctatis.

This variety differs from the typical form of the species in having its young twigs, petioles, petiolules, both leaflet-surfaces, peduncles, cyme-branches, pedicels, bractlets, and calyxes densely puberulent, and the lower leaflet-surfaces densely resinous-punctate.

The type of the variety was collected by Henri Humbert (no. 3019) among siliceous rocks on rocky slopes, altitude 800--1000 m., in the valley of Ithosy, basin of the Mangoky, Madagascar, on October 29 or 30, 1924, and is deposited in the herbarium of the Muséum National d'Histoire Naturelle at Paris. The name of this grand collector will always be indelibly associated with

the amazing flora of Madagascar, a botanist's paradise!

VITEX PULCHRA Moldenke, sp. nov.

Frutex; ramulis crassis medullosis dense flavescenti-villosis, pilis antrorsis; foliis 6-foliolatis; petiolis dense ferrugineo-villosulis, pilis brevibus subadpressis antrorsis; petiolulis dense ferrugineo-villosulis; laminis coriaceis supra plusminusve dense piloso-pubescentibus deinde minute scabridis, subtus densissime ferrugineo-pubescentibus, anguste ellipticis vel oblanceolatis acutis vel breviter acuminatis integris sed plerumque valde undulato-crispis; inflorescentiis axillaribus sessilibus densissime multifloris congestis.

Shrub; branchlets stout, medullose, densely flavescent-villous with atrorse hairs; principal internodes apparently abbreviated; leaves decussate-opposite, 6-foliolate; petioles stout, 7--13 cm. long, densely ferruginous-villosulous with subappressed antrorse hairs much shorter than those on the branchlets; petiolules rather stoutish, 0.5--2 cm. long, irregular in length, very densely ferruginous-villosulous with short antrorse hairs; leaflet-blades coriaceous, grayish-green above, ferruginous beneath, minutely scabridous above when mature, more or less densely pilose-pubescent when young, very densely ferruginous-pubescent beneath, narrow-elliptic or oblanceolate, the central ones 8.5--15 cm. long and 2.5--4 cm. wide, the lower ones smaller, acute or very shortly acuminate at the apex, entire but usually conspicuously undulate-crisped along the margins, varying from acute to obtuse or rounded at the base, sometimes asymmetric; midrib rather coarse, impressed and usually ferruginous-pubescent above, very conspicuously rounded prominent beneath; secondaries slender, 8--12 per side, more or less impressed above (at least on larger leaves), sharply prominent beneath, divaricate-ascending, irregularly arcuate-joined in many small loops near the margins beneath; veinlet reticulation abundant, varying from subprominulous above on smaller leaves to impressed on larger ones, sharply prominulous beneath; inflorescence axillary, sessile, very densely many-flowered and congested; peduncles obsolete; pedicels much abbreviated or obsolete, very densely flavescent-villous; bractlets elongate, linear, to 1 cm. long, glabrous and nigrescent on one surface, very densely flavescent-villous on the other surface; calyx campanulate, 7--8 mm. long, about 5 mm. wide at the apex, very densely fulvous-villous on the outside with long antrorsely subappressed hairs, the rim shortly 5-dentate, the teeth about 1 mm. long; corolla dark-red, tubular, about 2.5 cm. long, incurved, very densely long-villous on the outside with subappressed, long, sordid-silvery hairs, the lobes about 2 mm. long; stamens and pistil exerted about 1 cm. from the corolla-mouth.

The type of this handsome species was collected by Henri

Perrier de la Bâthie (no. 10238) in the forest on hills at an altitude of 800 m., Anoloïnoy, Madagascar, in January, 1932, and is deposited in the herbarium of the Muséum National d'Histoire Naturelle at Paris.

VITEX RESINIFERA Moldenke, sp. nov.

Frutex; ramis ramulisque gracilibus obtuse tetragonis dense puberulis deinde glabrescentibus; foliis 1-foliolatis; petioliis gracillimis minute adpresso-puberulis; laminis chartaceis anguste ellipticis acutis vel breviter acuminatis integris, ad basin plerumque obtusis vel rotundatis, utrinque dense resinoso-punctulatis, subtus plusminusve minutissime puberulis; inflorescentiis axillaribus 1--3-floris perspicue bracteolatis.

Shrub, 1--2 m. tall; branches and branchlets slender, grayish-brown, obtusely tetragonal, densely puberulent on the younger parts, glabrescent in age, lenticellate; nodes not annulate; principal internodes 0.6--3 cm. long, mostly abbreviated; leaf-scars minute; leaves decussate-opposite, 1-foliolate; petioles very slender, 6--14 mm. long, flattened above, minutely appressed-puberulous, brunnescent in drying; blades chartaceous, brunnescent in drying, dark and shiny above, lighter beneath, narrowly elliptic, 2.5--6.5 cm. long, 8--22 mm. wide, acute or short-acuminate at the apex, entire, mostly obtuse or rounded (rarely acute) at the base, densely resinous-punctulate on both surfaces, more or less obscurely and very minutely puberulous beneath; midrib slender, impressed above, prominent beneath; secondaries filiform, about 6 per side, arcuate-ascending, flat or very slightly subprominulous above, prominulous beneath; veinlet reticulation very abundant and fine, often subprominulous above, flat beneath or the larger portions subprominulous; inflorescence axillary, usually shorter or subequaling the subtending leaves, 1--3-flowered, conspicuously bracteolate; peduncles slender, 1.3--3 cm. long, appressed-puberulous, flattened, terminated by a pair of conspicuous bractlets which are narrowly oblong, about 5 mm. long and 1 mm. wide, minutely puberulous; pedicels filiform, 5--7 mm. long on the central flower, 1--3 mm. long on the lateral ones which are borne on filiform cyme-branches about 10 mm. long, minutely appressed-puberulous; calyx membranous, campanulate, deeply lobed to near the base, minutely appressed-puberulous, the tube about 2 mm. long and wide, the 5 equal lobes oblong-lanceolate, 4--5 mm. long and 1--1.5 mm. wide, acute at the apex; corolla-tube green, about 6 mm. long, broadly cylindric, ampliate at the apex, not arched, minutely appressed-puberulent on the outside, the limb labiate, the upper lip hooded, 2-lobed, green, the lower lip 3-lobed, white, the central lobe rounded; fruiting-calyx unchanged except that the united portion is much broader; fruit drupaceous, globose, nigrescent in drying, about 4 mm. long and wide.

The type of this species was collected by Henri Perrier de la Bâthie (no. 1727) in granitic soil in woods on Mount Ambokibenga, Milanĵa, Madagascar, in May, 1904, and is deposited in the herbarium of the Muséum National d'Histoire Naturelle at Paris.

VITEX RUBRA Moldenke, sp. nov.

Frutex vel arbor parva; ramis ramulisque griseis adpresso-puberulis deinde glabrescentibus; foliis 1-foliolatis; petioliis crassiusculis minute puberulis; laminis coriaceis ellipticis rotundatis vel emarginatis integris revolutis, ad basim acutis vel breviter acuminatis, utrinque glabris et dense impresso-punctatis; inflorescentiis axillaribus 1-paucifloris.

Shrub or small tree; branches and branchlets medium-slender, gray, often lichen-encrusted, obtusely tetragonal, appressed-puberulent, glabrescent in age; nodes not annulate; principal internodes mostly much abbreviated and about 5 mm. long, elongated to 4 cm. on larger branchlets; leaves decussate-opposite, 1-foliolate; petioles rather stoutish, 2--15 mm. long, flat and canaliculate above, minutely puberulent; blades coriaceous, gray-green on both surfaces and rather shiny, elliptic, 2.5--6.5 cm. long, 1.2--4.2 cm. wide, rounded or emarginate at the apex, entire and plainly revolute along the margins, acute or short-acuminate at the base, glabrous and densely impressed-punctate on both surfaces; midrib slender, flat above, prominent beneath; secondaries very slender, 5 or 6 per side, arcuate-ascending, flat and rather obscure above, prominulous beneath; veinlet reticulation indiscernible on both surfaces; inflorescence axillary, 1--few-flowered, shorter than the subtending leaves; peduncles very slender or subfiliform, obsolete or to 5 mm. long, puberulent; pedicels filiform, about 2 mm. long, whitish-puberulent; bractlets linear-oblong, about 2 mm. long and 1 mm. wide, conduplicate, whitish-puberulent; calyx campanulate, 2--3 mm. long, 1.5--2 mm. wide, grayish-puberulent, its rim plainly 5-toothed, the teeth ovate, about 1 mm. long; corolla dark-red, its tube cylindric, arched, 1.5--1.8 cm. long, densely pubescent on the outside, the lobes about 2 mm. long, erect; stamens and pistil exerted 8--9 mm. from the corolla-tube; fruiting-calyx somewhat incrassate, campanulate, about 5 mm. long and 7 mm. wide, puberulent, the rim deeply 5-toothed, the teeth ovate, 2--2.5 mm. long, acute at the apex; fruit drupaceous, elliptic, about 7 mm. long and 5 mm. wide, glabrous, wrinkled in drying.

The type of this species was collected by Henri Perrier de la Bâthie (no. 13709) at an altitude of 1500 m. on the Massif d'Andringitra, Madagascar, on April 19, 1911, and is deposited in the herbarium of the Muséum National d'Histoire Naturelle at Paris. Some of the species of this and other genera of this family in Madagascar appear to be worthy of cultivation.

VITEX STELLATA Moldenke, sp. nov.

Arbor parva; ramulis crassis medullosis obtuse tetragonis canaliculatis glauco-griseis dense tomentellis, pilis ad apicem glauco-stellatis; foliis 5-foliolatis; petiolis crassis dense tomentellis, pilis perspicue ad apicem glauco-stellatis; petiolulis crassis dense glauco-tomentellis; laminis subcoriaceis obovatis utrinque densissime pubescentibus rotundatis integris subrevolutis, ad basim longe attenuatis.

Small tree; branchlets stout, medullose, obtusely tetragonal, canaliculate, glaucous-gray, densely tomentellous with glaucous-stellate tips on the hairs; nodes not annulate; principal internodes 1.5-4 cm. long or longer; leaf-scars large but not especially prominent; terminal buds very densely flavo-esculent-tomentellous; leaves decussate-opposite, 5-foliolate; petioles stout, 12-13 cm. long, densely tomentellous with the hairs conspicuously glaucous-stellate at their tips giving the petioles a decided bluish cast; petiolules stout, 2-14 mm. long, the central ones longest, all densely tomentellous with glaucous-stellate hairs, canaliculate above; leaflet-blades subcoriaceous, bright-green above, cinereous beneath, obovate, very densely pubescent on both surfaces, the pubescence cinereous beneath, the central ones 16-18 cm. long and 7.5-8 cm. wide, the lateral and lower ones smaller, rounded at the apex, entire and somewhat revolute along the margins, long-attenuate at the base; midrib stout, flat above, rounded-prominent beneath; secondaries slender, regular, 15-17 per side, ascending, slightly arcuate toward the margins, not anastomosing, flat above, sharply prominent beneath; veinlet reticulation abundant, mostly rather obscure above, prominent beneath; inflorescence not seen.

The type of this species was collected by Raymond Decary (no. 14549) at Massif de l'Ankara, Madagascar, on July 25, 1939, and is deposited in the herbarium of the Muséum National d'Histoire Naturelle at Paris. Lacking inflorescences for examination, it is possible that this species may not be correctly placed here, in spite of the collector's determination. Its pubescence suggests the Bignoniaceae.

THE KNOWN GEOGRAPHIC DISTRIBUTION OF THE MEMBERS OF THE
VERBENACEAE, AVICENNIACEAE, STILBACEAE, SYMPHOREMACEAE, AND
ERIOCAULACEAE. SUPPLEMENT 5

Harold N. Moldenke

Since the publication of the previous supplement to this list by me on December 18, 1950, over 5400 additional specimens